El Dorado Union High School District

Oak Ridge High School

Naturally Occurring Asbestos

Operations and Maintenance Plan

November, 2009

ACRONYMS

Oak Ridge High School
Naturally Occurring Asbestos (NOA)
Operations and Maintenance (O&M) Plan

Acronym	Title	
AB	Asphalt Base	
AC	Asphalt Concrete	
APO	(El Dorado County) Air Pollution Officer	
AQMD	(El Dorado County) Air Quality Management District	
ATSDR	Agency for Toxic Substances and Disease Registry	
CAC	Certified Asbestos Consultant	
CalOSHA	California Occupational Safety and Health Program	
CARB	California Air Resources Board	
CCR	California Code of Regulations	
CGS	California Geological Survey	
DG	Decomposed Granite	
EDUHSD	El Dorado Union High School District	
EPA	Environmental Protection Agency	
M&O	Maintenance and Operations	Refers to department and staff
NOA	Naturally Occurring Asbestos	
O&M	Operations and Maintenance	Refers to the 'Plan'
ORHS	Oak Ridge High School	
SOP	Standard Operating Procedures	
US	United States	

EL DORADO UNION HIGH SCHOOL DISTRICT
OAK RIDGE HIGH SCHOOL
NATURALLY OCCURRING ASBESTOS (NOA)
OPERATIONS AND MAINTENANCE (O&M) PLAN

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EL DORADO UNION HIGH SCHOOL DISTRICT
OAK RIDGE HIGH SCHOOL
NATURALLY OCCURRING ASBESTOS (NOA)
OPERATIONS AND MAINTENANCE (O&M) PLAN

1.0 Introduction

This Operations and Maintenance (O&M) Plan establishes the El Dorado Union High School District's Policy for the cap remedy for naturally occurring asbestos (NOA) on the Oak Ridge High School (ORHS) Campus in El Dorado Hills, California. The primary objective of this Plan is to minimize the potential for asbestos exposure to students, staff, and visitors from ORHS campus soils. This will be accomplished by protecting the integrity of the engineering controls put in place by the El Dorado Union High School District and the US EPA.

1.1 Site Description

The school site, totaling approximately 48 acres, is described in Appendix A, Legal Description and Assessor's Parcel Map. The school site is identified as County Assessor's Parcel Numbers 111-020-22 and 111-020-25, and is located at 1120 Harvard Way, El Dorado Hills, California. It is bounded by Silva Valley Parkway on the east, Harvard Way on the north, and residential housing developments on the south and west. The current owner of the site is the El Dorado Union High School District.

The site is situated in a broad valley bounded by ridge flanks to the east and west. The terrain slopes mildly to the southwest. New York Creek, an ephemeral stream, trends southeast across the central portion of the site. Site construction work for the high school began in 1980. Prior usage of the site was grazing land.

1.2 Naturally-Occurring Asbestos (NOA) Hazard Summary

Asbestos is the common name for a series of naturally-occurring iron-magnesium-silicate minerals. Six asbestos minerals are currently referenced in state regulations; see Title 22 California Code of Regulations (CCR), Section 66261.24(a)(2) and Appendix X to Chapter 11, Title 22, Division 4.5, CCR. These six minerals are classified in two different groups based on their fiber characteristics: a) Chrysotile belongs to the "serpentine" mineral group; b) the remaining regulated asbestos minerals (amosite, crocidolite, actinolite, anthophyllite, and tremolite) belong to the "amphibole" mineral group. All regulated forms of asbestos are considered hazardous, and classified as known human carcinogens by state, federal, and international agencies. As defined in

H&SC Section 25316 and Section 25260 respectively, asbestos is both a hazardous substance and a hazardous material.

Human health effects of asbestos are dependent primarily upon exposure to airborne asbestos fibers, which can be inhaled deeply into lungs. Exposure to asbestos through inhalation can result in health impacts, including respiratory disease (asbestosis, a non-cancerous fibrosis of the lungs) and lung cancer (mesothelioma, cancer of the lung lining). Breathing of asbestos dust has been related to scarring of lung tissue (asbestosis). In addition, asbestos and tobacco smoke have a strong interactive synergism, which can produce even higher incidences of lung cancer. The longer a person is exposed to asbestos, and the greater the intensity of exposure, the greater the chances for development of health problems.

1.3 Geologic Conditions

The site is located within the western foothills region of the Sierra Nevada Mountain Range. According to the 1:48,000 scale General Geologic Map of the Folsom 15-minute Quadrangle (CDMG:R.C. Loyd, et al., 1984, OFR 84-50), the site is underlain by the Foothill Melange/Ophiolite Terrain, which is bounded west of the site by the Bear Mountains Fault. The melange-ophiolitic bedrock is the result of continental accretion along an ancient subduction zone, now represented by the fault. The melange-ophiolitic bedrock in the area typically consists of a chaotic mixture of metasedimentary and metavolcanic units with lesser amounts of gabbroic and ultamafic crystalline intrusive rocks, shales, cherts, and thin limestone lenses. Limited subsurface exploration at ORHS indicates the site is underlain by undifferentiated metavolcanic rocks of the Foothill Melange-Ophiolite Terrain. The metavolcanic bedrock at ORHS is characterized by a greenish gray color, predominantly fine grained texture, and is usually observed to contain various degrees of fracturing and weathering. The degree of weathering typically decreases with depth. The geologic structure mapped at the site indicates joint sets trending northeast to northwest and dip moderately to steeply east and west. Foliations are crude and scattered, with a northerly trend and steep dip to the east and west.

According to the Fault Activity Map of California and Adjacent Areas (Jennings, 1994) and the Peak Acceleration from Maximum Credible Earthquakes in California (CDMG, 1992), no active faults or Earthquake Fault Zones (Special Studies Zones) are located on the project site. The nearest mapped faults to the site are related to the Foothills Fault System, which includes the East and West Branches of the Bear Mountains Fault, located ¼ mile along the west and 15 miles to the east of the site. The West Branch of the Bear Mountains Fault passes roughly north to south between El Dorado Hills Boulevard to the west and the Silva Valley Parkway to the east, on the east side of the Raley's Shopping Center, and southward on Latrobe Road on the east side of the El Dorado Hills

Sewage Treatment Plant. It is well exposed in the road cut on the south side of Harvard Way west of ORHS. The western portion of the ORHS campus likely lies within the shear zone of this fault.

The California Geological Survey (CGS) published a map in 2000 (Open File Report 2000-02) that qualitatively indicates the likelihood for naturally occurring asbestos in El Dorado County. According to the CGS map, ORHS is located in an area that probably does not contain asbestos, however, it is located immediately east of an area identified as more likely to contain asbestos. According to the Geologic Map of the Folsom 15-minute Quadrangle (CDMG:R.C. Loyd, et al., 1984), the area to the west of ORHS contains an ultramafic body located along the West Branch of the Bear Mountains Fault.

The USEPA regulates two basic types of asbestiform minerals, Chrysotile and amphibole. Chrysotile asbestos is most commonly associated with serpentinites. Amphibole asbestos is commonly found to be associated with faults and shear zones. It can be found in association with serpentinites, talc (soapstone), as hydrothermal fracture filling associated with shear zones.

1.4 Purpose

The specific intent of this plan is to protect the health of students, staff, and visitors to the ORHS campus. This program has been in effect since 2003 and remains in effect indefinitely. This plan is designed to:

- minimize the potential release of NOA fibers from ORHS campus soils into air by minimizing disturbance of potentially NOA containing soils;
- institute a campus inspection and monitoring program to identify areas of erosion or damaged engineering controls;
- ensure any damaged engineering controls are immediately repaired or replaced; and
- ensure all outdoor maintenance activities are performed in a manner to minimize potential exposure to NOA from campus soils.

1.5 Previous Investigations

Previous Geotechnical Engineering and Geologic investigations at ORHS include: (1) a Foundation Engineering Report for Oak Ridge High School, prepared by Lowry and Associates in 1981; (2) an Addendum to the Geologic/Seismic Investigation for the Oak Ridge High School Site, prepared by Wheeldon and Associates in 1988; and (3) a Geotechnical Engineering and

Geologic Review for the 1992 Additions to Oak Ridge High School, prepared by Youngdahl & Associates, Inc., in 1992.

> Lowry and Associates (1981) described the soils located at ORHS as generally consisting of from 1 to 2 feet of red brown sandy SILT (ML) developed upon weathered metavolcanic bedrock.
>
> Wheeldon and Associates (1988) re-evaluated a previously reported "active fault trace" occupying the present course of New York Creek. The addendum report included extensive trenching along the southern boundary of the ORHS site. According to the report, no evidence of recent shear (fault) movement exists on, or adjacent to, the site. The conclusions reached by Wheeldon in the addendum report are supported by studies conducted by the U.S. Army Corps of Engineers and by Tierra Engineering (1981) in the project vicinity.
>
> Youngdahl & Associates (1992) drilled five 4-inch diameter continuous-flight auger borings to the depth of competent bedrock for their geotechnical and geologic study. The near-surface soils encountered in the exploratory borings consisted of fine sandy SILT (ML) extending to depths ranging from 0 to approximately 6 feet. The near-surface materials encountered were generally underlain by foliated metavolcanic bedrock in a moderately weathered condition. Zones of colluvial material approximately 6 feet in thickness were encountered above the bedrock horizon in the area of New York Creek.

These studies do not appear to have noted the presence or potential presence of NOA in their findings. The main point of concern addressed in these studies appears to be seismic hazard considerations. At the time these reports were written, the standard of practice for geotechnical or geologic investigations would generally not have included a NOA assessment.

A portion of the ORHS property is located over an ultramafic bearing rock formation that contains visible and microscopic veins of tremolite and actinolite asbestos. During construction and grading activities associated with the construction of two soccer fields, rock that was believed and later confirmed to contain tremolite was discovered.

In March 2003, representatives from the United States Environmental Protection Agency (U.S. EPA) and the Agency for Toxic Substances and Disease Registry (ATSDR) visited the school in response to petitions from citizens to conduct a

public health assessment to the students and faculty from potential NOA exposures from the incomplete soccer field project. Staff from the El Dorado County Air Quality Management District and DTSC also participated in the site visit. The District agreed to complete the fields and mitigate other areas on the campus that were visually identified as possibly containing NOA. In addition the District agreed to clean and test classrooms for NOA using an aggressive protocol developed for 'clearing' apartments for re-occupancy after the World Trade Center disaster.

These findings resulted in mitigation activities that were conducted during the summer of 2003. Several different types of engineering controls were implemented. All mitigation activities were performed in accordance with the California Air Resources Board (CARB) Asbestos Airborne Toxics Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations (Construction/ Quarrying ATCM).

In August of 2003, the District conducted a second phase of NOA assessment at ORHS. High activity areas of the school including the dirt track, baseball diamond infield, basketball courts and tennis courts were tested for NOA. Following the testing, the track and baseball infield were resurfaced and the outdoor basket ball court surfaces were cleaned. In the fall of 2003, U.S. EPA collected bulk soil samples from remaining exposed soil areas of the school and determined that additional mitigation measures were required. U.S. EPA completed these mitigation activities as part of their Removal Action Program during the summer of 2004.

The EPA issued a letter on October 8, 2004 stating their response action at ORHS was complete and that "EPA believes that there is no longer a substantial threat of endangerment to the faculty or students."

The following paragraphs briefly discuss the engineering controls which were implemented during the mitigation efforts.

1.6 Soccer Fields Mitigation

Fencing around both Soccer/Rugby Fields

Permanent eight foot fencing was installed around both soccer fields to prevent public access to the cut and fill slopes. The fence post holes were drilled and the excavated soil was spread on the upper practice field where it was covered over with geotextile filter fabric (Mirafi model # 140-N) and 24 inches of clean fill dirt.

Soccer/Rugby Field Surface - Phase 1

The vegetation which existed on the fields was continually watered and rolled down using a mechanical roller. Polypropylene geotextile filter fabric was placed over the entire surface area of the fields and pinned into place. Lastly, 24 inches

of clean top soil approved by the El Dorado County Air Quality Management District (AQMD) in consultation with DTSC was placed over the filter fabric.

West cut slopes lower field
The west cut slopes above the lower field were covered with a shotcrete slope retaining system. Where necessary, a minimum of a one-inch thickness of mulch was applied to the remaining multi-mat fabric on the cut slopes and followed by the application of a bonded-fiber matrix with pre-germinated seed mixture.

West cut slopes upper field
Where necessary, a minimum of a one-inch thickness of mulch was applied to the remaining multi-mat fabric on the west cut slope above the upper field followed by the application of a bonded-fiber matrix with pre-germinated seed mixture.

North and east side fill slopes
In areas where erosion had occurred, existing vegetation was pre-wetted and cut down. Imported clean top soil approved by the AQMD in consultation with DTSC was then spread to a layer of at least two inches thick filling in depressions and erosion riffs. Pre-germinated seed was then applied by a hydro seeding application method including a bonded-fiber matrix.

1.7 High Traffic Areas - Football Field and Track Mitigation

Football Field and Track Surface
The existing decomposed granite (DG) on the track was graded to the required specifications for the future “all weather” track project. Once the grading was completed, 2” of asphalt concrete (AC) was laid down over the entire track surface. In 2004 the asphalt track surface was covered with synthetic track material.

Other Non-Native Soil Areas Outside the Fence Line Surrounding the Track Area
Four inches of asphalt base (AB) was laid out over the areas between the track and the concession stand, and the area between the track and the restrooms.

1.8 High Traffic Areas - Varsity Baseball Field Mitigation

Varsity Baseball Infield
The existing imported material was removed from the infield of the varsity baseball field (approximately three inches). The infield was then covered with six inches of a 50% top-soil/50% ground lava rock composite material and baseball infield mix. All imported fill material was approved by the County with guidance from the DTSC prior to being imported to the field.

Other Non-Native Soil Areas Outside the Fence Line
Four inches of AB was laid down to isolate all other non-native soil areas outside the permanent fence line around the bleachers.

1.9 Campus Mitigation

Area 1 - Planter North of Upper Parking Lot
Boulders and surface vegetation were removed. Exposed soil was covered with geo-textile fabric and cedar bark and boulders were then replaced.

Area 2 - Walkway South of Bus Circle and Adjacent Planters
This area was encapsulated with clean fill, turf sod, filter fabric, bark and a decomposed granite walkway. During the summer of 2007 and EDUSHD modernization project renovated this area. The decomposed granite walkway was replaced with a concrete walkway and curbs. Planters on both sides of the walkway were renovated with plants and shrubs along with filter fabric and shredded bark.

Area 3 - Areas Adjacent to C2 and C3 and Drain South of B3
In areas near C2, C3 and B3 surface vegetation was removed, areas were leveled and concrete was poured to pave both areas.

Area 4 - Planters Near P15 and P16
Vegetation was removed, a geo-textile fabric was placed and areas were covered with shredded bark.

Area 5 - West Side Slope of East Parking Lot
Exposed soil at the top of the slope was covered with geo-textile fabric, shrubs were planted and area was covered with cedar bark.

Area 6 - Area North of P17
Approximately four yards of existing dirt from this area was removed and transported to the planter north of the wood shop (area 8) and covered with one foot of clean fill material. Four inches of concrete was then laid over the entire area to encapsulate the remaining dirt.

Area 7 - Non-Contiguous Planter Areas in Quad
Surface vegetation was removed; soil was leveled and covered with stamped concrete.

Area 8 - Planter North of Woodshop
This area inside of the planter was filled with native soil from areas 6 and 8 and graded out evenly. One foot of clean fill dirt was placed on top of the entire area behind the wall. In October 2004, this area was covered with turf sod with the approval of the NOA Coordinator.

Area 9 - Area West of P18, P19 and P20
Approximately five yards of existing dirt from this area was removed and transported to the planter north of the wood shop (area 8). Two inches of AC over two inches of AB was then laid over the entire area to encapsulate the remaining dirt.

Area 10 - Non-Contiguous Area North of the Staff Parking Lot
In all areas, surface vegetation was removed and exposed soil was covered with geo-textile fabric and shredded bark. A small retaining wall was built at the western edge of the sloped median.

Area 11 - Concrete Walkways Surrounding Building R
This area was modified during the expansion project of 2008. All walkways surrounding Building R are concrete.

Area 12 - Planter areas South and West of Building R
In all planter areas, exposed soil was covered with geo textile fabric and shredded bark. A small retaining wall was built at western edge of slope in front of classrooms P-5 to P-9.

Area 13 - Area West of Portable Classrooms P4 through P13
This area was mitigated with seeded straw blanket and chain link fence creating an exclusionary zone.

Area 14 - Walkway South of the Cafeteria and Over the Bridge and Surrounding Building J
During expansion of 2008, this area was completely re-graded and covered with concrete.

Area 15 - Area Southwest of Building M
During expansion of 2008, this area was mitigated with a seeded straw blanket.

Area 16 - Either End of the Footbridge Over Creek, North of the Counseling Office
Surface vegetation was removed and exposed soil was covered with geo-textile fabric and cedar bark.

Area 17 - Fire Road From Harvard Way to EID Generator
This road is covered with 3 inches of AC. The surrounding slope was covered with concrete and cobblestones to the grass edge.

Area 18 - Asphalt Areas at West End of Footbridges Over Creek and Along Creek Bank to West of Cafeteria Patio
This area was covered with road base, graded and compacted then paved with AC to prevent foot traffic from exposing native soils.

Area 19 - Riverbank Slope
This area was mitigated with a seeded straw blanket. The area closest to the walkway was covered with shredded bark.

Area 20 – Grass Areas South of Building P and North of Building J
During expansion of 2008 this area was re-graded and planted with sod turf.

Area 21 – Slope Areas South of Building P
This area has been mitigated with geo-textile fabric, shredded bark and native plants.

Area 22 - Grass Areas West of Building P
During expansion of 2008 this area was re-graded and planted with sod turf.

Area 23 - Walkway North of Building P
During expansion of 2008 this area was graded and covered with concrete for access to new building.

Area 24 - Area Northwest of the West Parking Lot
This area is covered with filter fabric, shredded bark and sod turf.

Area 25 - Cut Slope West Side of West Parking Lot
This area was covered with erosion control fabric and over seeded.

Area 26 - Asphalt Access Road to Lower Soccer Field
Access road to lower soccer field was compacted and paved with 2" AC pavement.

Area 27 - Lower Soccer Field, North Side Fill Slope and Access Roads
This fill slope was created during the construction of the soccer fields. The fill slope was compacted, seeded and irrigated to provide vegetation coverage and erosion control. Access road was graded and covered with filter fabric and covered with AB.

Area 28 - Behind Gym and Locker Rooms
This area was covered with four inches of AB to isolate surface soils.

Area 29 - Asphalt Basketball Courts – West Side
This area was mitigated with four inches of AB to isolate the surface soil and paved with 3 inches of AC for two basket ball courts in 2005. In 2009, portable classroom P-5 was removed and additional asphalt was added.

Area 30 – Stream Bank East of Building J
This area was graded and seeded to provide vegetative coverage. In the area where a five percent slope was exceeded, concrete and cobblestones were used to isolate the surface soil.

Area 31 – Driveway Along the East and South of Building O
This area was covered with road base, graded and paved with AC.

Area 32 - Aggregate Base Area East of Building O
This area was covered with filter fabric and 4" of AB and compacted.

Area 33 - Concrete Area and Planter West and South of Building O
The "O" Building construction was completed in 2005. The soil in this area was encapsulated with concrete flat work around the building. This also included a block wall and raised planter to separate the basketball courts from the classrooms. The raised planter was filled with clean soil. The planter area south of Building O was covered with filter fabric and shredded bark.

Area 34 - Area Behind Home Bleachers and Surrounding the Maintenance Building
The construction of the new maintenance building was completed in the late spring of 2008. This area has been covered with 2 inches of AC pavement.

Area 35 - Areas Under Home Bleachers
Ground under bleachers was covered with geo-textile fabric and 6" of compacted road base.

Area 36 – Aggregate Base Area North of the Home Bleachers
This area was cleared of all vegetation and covered with geo-textile fabric and 6" of compacted road base.

Area 37 - Synthetic Turf in the Football Field and Southern D-Zone
The sod was removed in this area. Native soil was covered with filter fabric, AB and synthetic turf.

Area 38 - Cut Slope on East Side of the Football Stadium
Surface vegetation was removed and areas covered with geo-textile fabric and clean fill. Plants were installed and cedar bark was placed over entire area. Gravel paths were installed along south side and top of visitor bleachers. Redwood trees were planted along the fence line.

Area 39 - Running Track Around Football Field and Pole Vault Area on East Edge
In 2005 the asphalt track was covered with a rubberized all weather track surface. This area includes AB covered areas adjacent to the track. Areas between both bleachers and running tracks were capped with 2 inches of asphalt in 2008.

Area 40 - Area Between Varsity Softball Field and Silva Valley Parkway
This area was used to dispose of potential NOA containing soils generated from digging and trenching during cell tower projects. A pit was created to accept slurry spoils. The area was backfilled and covered with seeded straw blanket.

Area 41 - Varsity Softball Infield and Batting Cages
The Varsity Softball Infield was covered with filter fabric, and 6 inches of clean infield mix. The area around the batting cages was covered with filter fabric and AB. The batting cages are now concrete.

Area 42 - NOA Soil Containment Area Between Varsity and JV Softball Fields
Excess native soil from past mitigation work as well as future projects are stockpiled in this area. Stockpiles are monitored for adequate vegetative cover and an exclusionary chain link fence prevents unauthorized access.

Area 43 – JV Softball Infield and Area Behind Backstop
The infield mix was completely removed and replaced with clean import fill material. The area behind the backstops were cleaned of all vegetation and covered with filter fabric and clean AB material.

Area 44 - Varsity Softball Field Access Road
The access road was cleared of all vegetation and covered with filter fabric and 3" of AB material.

Area 45 - JV Baseball Infield and Area Behind Backstop
The infield mix was completely removed and replaced with clean import fill material. The area behind the backstops were cleaned of all vegetation and covered with filter fabric and clean AB material.

Area 46 – Maintenance Area, Snack Shack Area and Access Road to Visitor's Side Outside of Football Stadium Fence
Area was scraped of vegetation, covered with geo-textile fabric, AB and AC pavement.

Area 47 – Access Road From Football Stadium to Upper Rugby/Soccer Field
Area was covered with road base, graded, compacted and then paved with AC.

Area 48 – North Side of JV Baseball Field Access Road to Creek
Vegetation scraped from other areas was placed in this area. A retaining wall was built on the south side of the pile, and the pile was leveled and covered with geo-textile fabric, clean soil and cedar bark. Plants were also installed.

Area 49 – Walking Path Along Meadow Wood Drive
The access path from Meadow Wood Drive was mitigated with filter fabric and AB.

Area 50 – South Side of Varsity Baseball Field, Including Batting Cages and Warm-Up Areas

Batting cages and warm up areas were scraped of vegetation, covered with filter fabric and covered with clean infield mix. Remaining area was scraped of vegetation, covered with filter fabric, clean fill and sod.

Area 51 – Baseball Field Access Road

Area was covered with road base, graded, compacted and then paved with AC.

Area 52 – Varsity Baseball Infield and Area Behind the Backstop

The infield area was scraped of all existing infield mix and replaced with clean infield mix. Areas between the backstop and baselines were covered with sod in 2007. Area behind backstops is covered with 2 inches of AB.

Area 53 – Upper Soccer Field South Side Fill Slope

This fill slope was created during the construction of the soccer fields. The fill slope was compacted, seeded and irrigated to provide vegetation coverage and erosion control.

Area 54 – Chain Link Fence Surrounding soccer Field

Chain link fencing was installed around the entire area of all cut and fill slopes to prevent access that may cause erosion.

Area 55 – Upper Soccer Field, West Side Cut Slope

This cut slope was created during the construction of the soccer fields. The cut slope was covered with erosion control fabric and seeded to provide vegetation coverage and erosion control.

Area 56 – Upper Soccer Field Playing Surface

During the construction of the soccer field in this area the entire playing surface was covered with filter fabric and 24 inches of clean fill material. The irrigation system was then installed in the clean fill material.

Area 57 – Lower Soccer Field West Side Cut Slope

This cut slope was created during the construction of the soccer fields. Where necessary, a minimum of one-inch thickness of mulch was applied to the remaining multi-mat fabric on the cut slopes followed by the application of a bonded fiber matrix with pre-germinated seed mixture.

Area 58 – Lower Soccer Field West Side Gunite Encapsulate

The west cut slopes above the lower field were covered with a shotcrete slope retaining system.

Area 59 – Lower Soccer Field Playing Surface
During the construction of the soccer field in this area the entire playing surface was covered with filter fabric and 24 inches of clean fill material. The irrigation system was then installed in the clean fill material.

Area 60 – Lower Soccer Field East Side Fill Slope
This fill slope was created during the construction of the soccer fields. The fill slope was compacted, seeded and irrigated to provide vegetation coverage and erosion control.

Area 61 – Lower Soccer Field South Side Cut Slope
This cut slope was created during the construction of the soccer fields. The cut slope was covered with geo-textile fabric and seeded to provide vegetation co

Left alone, these mitigation measures should prove sufficient to significantly reduce the potential for exposure to NOA contaminated soils. However, it is anticipated that some maintenance and repair activities could potentially disturb soils containing NOA. This plan provides guidelines so that these types of maintenance activities can be done in a safe manner and when completed, does not result in new potential exposure pathways.

2.0 Plan Responsibilities

2.1 NOA Coordinator

The Director of Maintenance and Operations of the El Dorado Union High School District will be the NOA Coordinator. The Director of Maintenance and Operations can be reached at:
6540 Commerce Way
Diamond Springs, CA 95619
(530) 622-0140
Facsimile Number (530) 622-2319

In event of the absence of the Director of Maintenance, NOA Plan Coordinator responsibilities will be termporarily performed by the EDUHSD Associate Superintendent of Business. The On-Site NOA Plan Contact is the Principal of ORHS whose office is located in the administration building on the ORHS campus.

The responsibilities of the NOA Plan Coordinator are as follows:

- reporting planned activities that will potentially disturb NOA to the appropriate regulatory agencies, if required, including the El Dorado County Air Pollution Control Officer (APO) and the DTSC, prior to commencement of the activities.

- notify teachers, students, parents, maintenance personnel, and administrators of the implementation of the plan and answer questions about plan requirements;

- ensure that any contractors or community/parent groups working at the school are aware of the plan;

- maintain records associated with the plan, including mitigation reports, air sampling reports, periodic surveillance documentation, etc.;

- coordinate project-related air monitoring and periodic surveillance activities;

- coordinate maintenance activities involving the disturbance of potentially NOA contaminated soils; and,

- coordinate all maintenance staff NOA awareness training.

Campus occupants such as teachers, maintenance staff, athletic coaches, community/parent groups, the principal, and other administrators also have responsibilities under the O&M Plan. Campus occupants must ensure they do not conduct activities which may disturb potentially NOA contaminated soils without first contacting the NOA Plan Coordinator or his/her designated representative. The following table includes personnel included in the plan and their basic responsiblilities.

EDUHSD NOA O&M Plan Personnel Responsibilities	
NOA Plan Coordinator	The NOA Plan Coordinator is responsible for the implementation and maintenance of the ORHS NOA O&M Plan. This includes approval of all non-emergency work requests and all notification and record keeping requirements.
On-Site NOA Plan Coordinator	The On-Site NOA Plan Coordinator is the primary contact with community and parent groups in regards to the ORHS NOA O&M Plan and its requirements. The On-Site NOA Plan Coordinator reports to the NOA Plan Coordinator on all areas.
ORHS Maintenance Staff	The ORHS Maintenance Staff are responsible for conducting and recording quarterly inspections of the NOA mitigation controls at ORHS. Under this Plan the Maintenance Staff reports to the NOA Plan Coordinator and On-Site NOA Plan Coordinator.
ORHS Campus Occupants	Campus occupants such as the teachers, athletic coaches, all ORHS staff and community/parent groups are responsible for conducting all ORHS campus activities in accordance with this NOA O&M Plan.

2.2 O&M Professional

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Pursuant to Business and Professions Code, Chapters 7 and 12.5, and the California Code of Regulations, Title 16, Chapters 5 and 29, the O&M Professional is a California-registered professional with expertise in NOA investigation and remediation, e.g., engineer or geologist, who is familiar with the cap systems installed at the school site. The O&M Professional has additional expertise and experience with slope stability [if applicable]. To demonstrate expertise in NOA investigation and remediation, the resume of the O&M Professional, and the statement of qualifications of the consulting firm responsible for his/her work, are included as Appendix L.

The responsibilities of the O&M Professional are to:

- conduct annual inspections (including five-year reviews);
- prepare and sign Annual Inspection Summary Reports and Five-Year Review Reports; and
- other environmental professional work related to NOA matters at the school site.

2.3 School Site Designee(s)

Principal
Oak Ridge High School
1120 Harvard Way
El Dorado Hills, CA 95762
(916) 933-6980, ext. 1011
Facsimile Number (916) 933-6987

The responsibilities of the School Site Designee(s) are to:

- ensure that all school staff with O&M roles have received appropriate training and direction;

- ensure that activities which may potentially disturb NOA-containing soils will not be conducted at the school site without the knowledge and approval of the NOA Coordinator; and

- provide, as necessary, information to staff and parents concerning any releases of NOA at the school site.

3.0 Administrative Controls

All O&M activities will be managed through administrative controls and will be subject to approval by the NOA Plan Coordinator. On an annual basis, the NOA Plan Coordinator should review the *Final Oak Ridge High School Naturally Occurring Asbestos Mitigation Report* and any subsequent reports regarding the disturbance, management, and mitigation of NOA on the ORHS campus. A report should then be prepared summarizing the management and mitigation of NOA on the campus over the previous year.

3.1.1 Training Requirements

The NOA Plan Coordinator and all members of the ORHS maintenance staff shall receive two hours of NOA awareness training. The maintenance staff must receive this training regardless of whether or not their work activities will involve potential contact with or disturbance of NOA containing soils. New maintenance staff employees assigned to ORHS must receive the required training within 60 days of hire. Periodic refresher training will be conducted every two years. The awareness and refresher training shall be designed and conducted by a Certified Asbestos Consultant (CAC) and will address the specific subjects listed below:

- explanation of NOA;
- health effects of NOA;
- known locations of potentially NOA contaminated soils (mitigation areas);
- recognition of eroded or damaged engineering controls;
- small scale/short duration O&M Standard Operating Procedures;
- emergency O&M procedures; and,
- details of the ORHS NOA O&M Plan.

Upon completion of training, O&M employees should have familiarity with appropriate hazard controls and work practices to avoid disturbing NOA and prevent NOA exposures, such as the use of wet methods for dust suppression; protective clothing; proper cleanup and disposal of potential NOA soils; cleaning of equipment and clothing exposed to potential NOA soils; relationship between smoking, asbestos, and cancer.

3.1.2 Asbestos Awareness Trainer Requirements

The school district will designate a Competent Person to carry out training requirements as described in 40 CFR 763.92(a)(1) and 8 CCR 1529(k)(9)(G) for asbestos construction. A "Competent Person" is one who:

- is capable of identifying existing and predictable conditions in the surrounding or working conditions which are unsanitary, hazardous, or dangerous to employees;
- is also capable of identifying existing asbestos hazards in the workplace, and selecting the appropriate control strategy for asbestos exposure; and
- has authority to take prompt corrective measures to eliminate such identified hazards.

3.1.3 Asbestos O&M Inspection Training

A designated professional will conduct NOA Inspection training. The curriculum for NOA Inspection training will include, but not be limited to, the following subjects:

- overview of O&M Plan;
- descriptions and locations of onsite mitigation measures/engineering controls;

- required inspection locations;
- recognition of deteriorated, eroded, or damaged engineering controls;
- monthly inspection checklist (Appendix C);
- Standard Operating Procedure (SOP) (see Appendix E, F and G);
- maintenance and repairs of engineering controls;
- documentation of repairs to engineering controls;
- roles and responsibilities of O&M personnel; and
- contact list of responsible persons.

New maintenance staff employees assigned to complete inspections will be trained prior to performing inspections in accordance with 40 CFR 763.

3.2 Periodic Surveillance Activities

Quarterly inspections of the engineering controls shall also be performed by a designated maintenance employee in consultation with NOA Coordinator and O&M Professional. A checklist of the specific control measures and their locations will be used by the employee during this inspection to ensure that no control measures are overlooked. This quarterly inspection checklist shall be submitted to the NOA Plan Coordinator to be included in the NOA Plan files. A copy of this checklist is included as Appendix C of this Plan.

During inspections, all items flagged for required maintenance will have a specified action date for completion of required repairs. The NOA Coordinator is responsible for follow-up review to ensure that identified repairs are completed on schedule, and will sign-off in the completion blocks of the inspection reports. The NOA Coordinator will notify DTSC of any failure of the engineering controls that is not repaired following the SOP within 14 days of discovery; such notifications will include a proposed schedule for completion of required repairs and maintenance. Quarterly inspection records will be maintained with the NOA Coordinator and will be available upon request.

Annually, all NOA engineering controls will be inspected by a California Registered Geologist to ensure that they remain intact, and that no soil erosion or other material degradation has occurred. The NOA Plan Coordinator shall accompany the geologist on the survey. The annual inspection report will include any required repairs, changes in site conditions or usage, descriptions of any onsite construction activities, or any other significant information relating to the NOA engineering controls at ORHS. The geologist's annual report shall be included and maintained in the NOA Plan Coordinator's NOA files, and shall be submitted to the DTSC and AQMD no later than 60 calendar days after the inspection.

Five-Year Reviews will be conducted to evaluate ongoing remedy effectiveness where hazardous materials, such as NOA, remain in place. The purpose of five-year review is to determine whether the remedy:

1. Remains protective of human health and the environment
2. Is functioning as designed
3. Is maintained appropriately by O&M activities.

Each Five-Year Review will be conducted by the O&M Professional, who will prepare and sign the Five-Year Review Report, following the outline in Appendix K.

The NOA Coordinator will notify DTSC at least 14 days in advance of each Five-Year Review inspection. The first Five-Year Review Inspection will be completed in ***2015***, five years after ***the Site Certification by DTSC October 1, 2010***. All subsequent five-year inspections will be completed by December 31st of every fifth year.

All NOA engineering controls will be inspected by the O&M Professional in the same manner as in the annual inspection. The purpose of the fifth year inspection is to identify and review completion of any required repairs, changes in site conditions or usage, descriptions of any onsite construction activities, or any other significant information relating to the NOA engineering controls that may have taken place over the previous five years.

The Five-Year Review Report will be submitted to DTSC for review and approval within 60 days after completion of each fifth-year inspection, in accordance with reporting requirements specified in Appendix H. The district will perform additional NOA investigation, monitoring, and/or mitigation as required by DTSC based upon the findings of each Five-Year Review Report.

Any failure of the engineering controls shall be repaired as soon as practical following procedures listed in the following sections of this plan.

3.2.1 Inspections for Unplanned Events

School district employees will also conduct inspections of engineering controls and steep sloped areas during or immediately following unplanned events, such as fires, broken utility lines, floods and/or heavy rain, seismic events, etc., where engineering controls may be compromised and NOA soils may be exposed. “Heavy” rain (e.g., rainfall may be defined as exceeding 0.46 inches in one hour in the Sacramento region). “Significant” seismic events may include those earthquakes occurring nearby, of a magnitude exceeding 5.0 on the Richter scale.

The NOA Coordinator will document all inspections and required repairs or maintenance, and incorporate such documents into the Annual Inspection Summary Report.

The NOA Coordinator will notify DTSC of any failures, i.e., compromised integrity or possible NOA exposures, of the engineering controls resulting from unplanned events that are not repaired, following the SOP, within 14 days of discovery; such notifications will include a proposed schedule for completion of required repairs and maintenance.

3.3 Recordkeeping

The NOA Plan Coordinator is responsible for maintaining all records and documentation required in this O&M Plan. The NOA O&M Plan records will be maintained by the NOA Plan Coordinator indefinitely. Records will be available during normal business hours for review by the public upon request. Copies of this O&M Plan and the *Final Oak Ridge High School Naturally Occurring Asbestos Mitigation Report* will also be maintained and available to the public at the ORHS Administration Office. The O&M Plan records are filed in the following categories:

- Correspondence
- Operations And Maintenance Plan
    - The O&M Plan
    - Annual Reviews and Summaries
    - Annual Cleaning Verification
    - Annual Certified Inspection
    - Inquiries
    - Contacts
    - Site Map
- Forms
    - Quarterly Inspection Forms
    - CIA Permit Application Forms
    - Soil Import/Export Forms
    - Project Close-Out Forms
    - Emergency Activity Forms
    - Inquiry Forms
- Signed Forms
    - Staff Acknowledgement Forms
    - Ground Staff Acknowledgement Forms
    - Intrusive Work (Contractor) Acknowledgement Forms
    - 2 Year Training Signed Acknowledgement Forms
    - New Employee Training
    - Coaches' Signed Acknowledgement Forms

- Quarterly Inspections (Monthly Inspections prior to 2012)
- Indoor Air Sampling Reviews / Soil Import and Export Reports
- Completed Projects
    - Completed Closure Forms
    - Completed Emergency Activity Forms
    - Completed Projects
    - Approved CIA Applications
- Five Year O&M Plan Review Report signed by a California licensed professional (PG or PE). This report will provide a summary of the previous four annual reports as listed in Appendix K.

3.4 NOA Intrusive Work Activities

"NOA Intrusive" work includes any construction or maintenance work activities that disturb NOA-containing soils, including but not limited to; digging, excavating, grading, repairing, trenching, filling, gardening, and other soil movement that may penetrate or otherwise compromise the caps in place, thereby opening pathways for possible human exposures to NOA.

3.4.1 Long-Term NOA Intrusive Work

Long-Term NOA Intrusive Work is defined as:

- Project Time Frame – More than 7 Days
- Approval – DTSC & NOA Coordinator
- Notification – DTSC – 14 days for modified SOP's; 7 days for O&M Plan SOP's
- Documentation – CIA Permit and Close Out Report
- Procedures – Follows O&M Plan SOP's (Appendix G) or Modified SOP's approved by DTSC

3.4.2 Short-Term NOA Intrusive Work

Short-Term NOA Intrusive Work is defined as:

- Project Time Frame – less than 7 days
- Approval – NOA Coordinator only
- Documentation – NOA CIA Permit
- Procedures – Follows O&M Plan SOP's (Appendix F)

3.4.3 Routine NOA Intrusive Maintenance Work

Routine NOA Intrusive Maintenance Work is defined as:

- Work completed by NOA trained M&O staff
- Procedures – Follows O&M Plan SOP's (Appendix E)
- Approval – None required
- Notification – None required

3.5 Non-NOA Intrusive Work

"Non-NOA intrusive work" is defined as including construction, repairs, and/or maintenance activities at the school site where exposure of NOA-containing soils is not anticipated and where the integrity of engineered controls, such as hardscaped or landscaped caps, is not compromised. Non-NOA intrusive work includes work where the geotextile/marker, if present, will not be penetrated or breached, even though work may be performed in upper layers of a cap system, e.g., clean fill. School district policies require the following procedures be taken when conducting non-NOA intrusive work at the school site.

- NOA Coordinator or designee will provide information regarding location of cap systems and soils containing NOA to selected contractors and O&M personnel to minimize likelihood of NOA intrusion.

- O&M Professional and/or O&M personnel will conduct inspections during construction and/or maintenance activities at the school site to ensure NOA-containing soils are not being disturbed.

- In the event that NOA-containing soils are inadvertently disturbed, the integrity of engineered controls is compromised, or a geotextile/marker is breached, the NOA Coordinator will be responsible for notifying DTSC in accordance with provisions in Appendix H and implementing the appropriate procedures in accordance with the provisions described in Section 3.4.

3.6 Import/Fill Materials

No off-site soils will be brought onto the ORHS campus without the written consent of the O&M Plan Coordinator. The O&M Plan Coordinator shall assure that all imported soils are tested in accordance with, and meet the requirements of the DTSC's most recent *Information Advisory: Clean Imported Fill Material* and CARB's Construction/Quarrying ATCM. This includes soils donated by community or parent groups.
Any un-tested import material must be evaluated, and its origin confirmed by and O&M Professional.

All import material will be recorded on the Import/Export Materials Form.

The clean-fill should be evaluated in consultation of an O&M Professional.

3.7 Standard Operating Procedure (SOP) Guidelines

Whenever possible, NOA intrusive construction or maintenance work activities will be conducted in accordance with the DTSC-approved SOP (see Appendix E, F, and G). Except in unplanned situations, advance notification to DTSC will be submitted in accordance with requirements found in Appendix H.

The SOP identifies procedures to be followed for NOA-intrusive work, including:

- stabilization of site.
- limitation of site access as appropriate.
- NOA exposure monitoring of workers.
- required notification to DTSC.
- management of excavated soils including dust control and soil segregation.
- decontamination procedures for excavation equipment and workers.
- geotextile/marker, cap repair, or fill replacement procedures including temporary measures.
- evaluation and use of new fill materials.

If site conditions are not adequately addressed in any of the pre-approved SOPs, a modification of the SOP may be required. For example, the SOP may not include provisions for conducting air monitoring at fence lines, or use of a meteorological air station. When such air monitoring is required pursuant to CalOSHA or other regulatory requirements, such as CARB's ATCMs, a modified or new SOP detailing such procedures will be submitted in advance for DTSC's review.

3.8 Outdoor Housekeeping

All grading, trenching, digging, etc. of soils on the ORHS campus will be covered by this O&M Plan. This includes both areas that have been mitigated and non-

mitigation areas on campus. In addition, routine outdoor maintenance, such as mowing, will not be performed if it produces visible dust.

3.9 Use of Leaf Blowers and Leaf Vacuums

No leaf blowers will be used while maintaining the grounds on the ORHS campus.

4.0 Site Access

Upon request, reasonable access to the school site will be provided to DTSC representatives or O&M personnel by the NOA Coordinator.

5.0 Variance, Modification, and Termination of O&M Plan

The NOA Coordinator may seek variance, modification, and/or termination of the O&M Plan at any time during the life cycle of the cap remedy. "Variance" refers to possible release from specific individual O&M Plan requirements for a limited time period, while "modification" refers to permanent revision of specific individual O&M Plan requirements. DTSC may allow variance, modification, or termination of the O&M Plan if DTSC determines that:

- such variance, modification, or termination is protective of public health and safety and the environment;

- it is neither feasible nor appropriate to continue the O&M Plan as a component of the remedy selected for the school site.

5.1 O&M Plan Variance

The NOA Coordinator may apply to DTSC for a written variance from the provisions of the O&M Plan. DTSC will evaluate each request, and will grant a variance request only after determining that such a request would be protective of human health and the environment.

5.2 O&M Plan Modifications

When long-term performance of the selected cap remedies has been confirmed, the NOA Coordinator may apply to DTSC to modify the requirements of the O&M Plan based on site-specific monitoring results and conditions. Additionally, DTSC may initiate appropriate O&M Plan modifications in consultation with the District.

5.3 Termination of O&M Plan

Based on review of a Five-Year Review Report or a subsequent Annual Inspection Summary Report, DTSC may determine if the cap remedy has met either of the following performance criteria required for termination of O&M activities:

- availability of new scientific information resulting in changes or modifications to DTSC's technical criteria for evaluating unacceptable risk levels of NOA concentrations in soils;
- change in land use, where the school site is no longer used as an educational facility.

Prior to the sale, lease, or sublease of the school site, or any portion thereof, the NOA Coordinator will provide the buyer, lessee, or sub lessee with notice that NOA-containing soils are located on or beneath the school site.

DTSC will notify the NOA Coordinator in writing when continued O&M activities for the cap remedies are no longer required. Because caps are not anticipated to have any adverse impacts on building foundation systems or other components, removal and/or decommissioning of the caps following termination of the O&M activities will not be required by DTSC.

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Appendix A (Attachments)

Legal Descriptions and Assessor's Parcel Maps

Oak Ridge High School
Naturally Occurring Asbestos (NOA)
Operations and Maintenance (O&M) Plan

Appendix B (Attachment)

ORHS NOA Site Map

Oak Ridge High School
Naturally Occurring Asbestos (NOA)
Operations and Maintenance (O&M) Plan

Appendix C (Attachment)

Quarterly NOA Engineering Control Inspection Checklist

Oak Ridge High School
Naturally Occurring Asbestos (NOA)
Operations and Maintenance (O&M) Plan

Oak Ridge High School N.O.A. Quarterly Inspection Form

Date _____

Initials _____

AREA	Any disturbance of soil	Condition of encapsulation	Comments / Solutions
(1) Planter north of upper parking lot (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(2) Walkway south of bus circle and adjacent planters (Inspect to ensure concrete is intact; inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(3) Areas adjacent to C2 and C3 and drain south of B3 (Inspect to ensure that concrete is intact, and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(4) Planters near P15 and P16 (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(5) West side slope of east parking lot (Inspect to ensure vegetation adequately covers the native material.)	Yes ¨ No ¨	OK ¨	
(6) Area north of P17 (Inspect to ensure that concrete is intact, and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(7) Non-contiguous planter areas in quad (Inspect to ensure that concrete is intact, and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(8) Planter north of woodshopand planter west of E-1 (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(9) Area west of P18, P19 and P20 (Inspect to ensure that asphalt is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(10) Non-contiguous area north of the staff parking lot (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(11) Concrete walkway surrounding Building R (Inspect to ensure that concrete is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(12) Planter areas south and west of Building R (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	

Oak Ridge High School N.O.A. Quarterly Inspection Form

Date _____
Initials _____

AREA	Any disturbance of soil	Condition of encapsulation	Comments / Solutions
(13) Areas west of portable classrooms P4 through P13 (Inspect fencing to ensure that exclusionary areas are intact and adequate to prevent unauthorized access. and that the vegetation adequately covers the native material.)	Yes ¨ No ¨	OK ¨	
(14) Walkway south of the cafeteria and over the bridge and surrounding Building J (Inspect to ensure that concrete is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(15) Area southwest of Building M (Inspect to ensure vegetation adequately covers the native material.)	Yes ¨ No ¨	OK ¨	
(16)Either end of the footbridge over creek north of the counseling office (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(17) Fire road from Harvard Way to EID generator (Inspect to ensure that asphalt and concrete is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(18) Asphalt areas at west end of footbridges over creek and along creek bank to west of cafeteria patio (Inspect to ensure that asphalt is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(19) Riverbank slope (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(20) Grass areas south of Building P and north of Building J (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(21) Slope areas south of Building P (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(22) Grass areas west of Building P (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(23) Walkway north of Building P (Inspect to ensure that concrete is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(24) Area northwest of the west parking lot (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	

Oak Ridge High School N.O.A. Quarterly Inspection Form Date _____
Initials _____

AREA	Any disturbance of soil	Condition of encapsulation	Comments / Solutions
(25) Cut slope west side of west parking lot (Inspect vegetation on hillside and ensure erosion control fabric remains intact and useful for its intended purpose.)	Yes ¨ No ¨	OK ¨	
(26)Asphalt access road to lower soccer field and Parking Lot West of Small Gym (Inspect to ensure that asphalt is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(27) Lower soccer field, north side fill slope and access roads (Inspect covering material and AB to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(28) Behind gym and locker rooms (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(29) Asphalt basketball courts - west side (Inspect covering material to ensure that no filter fabric or native soil is exposed. Inspect to ensure that asphalt is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(30) Stream bank east of Building J (Inspect covering material to ensure that no filter fabric or native soil is exposed. Inspect to ensure that concrete is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(31) Driveway along the east and south of Building O (Inspect to ensure that the asphalt is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(32) Aggregate base area east of Building O Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(33) Concrete area and planter west and south of Building O (Inspect to ensure that concrete is intact and that native soil is not exposed; inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(34) Area behind home bleachers and surrounding the maintenance building (Inspect to ensure that asphalt is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	

Oak Ridge High School N.O.A. Quarterly Inspection Form

Date _____

Initials _____

AREA	Any disturbance of soil	Condition of encapsulation	Comments / Solutions
(35) Areas under home bleachers (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(36) Aggregate base area north of the home bleachers (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(37) Synthetic turf in the football field and southern D-zone (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(38) Cut slope on east side of the football stadium (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(39) Running track around football field and pole vault area on east edge (Inspect to ensure that asphalt is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(40) Area between varsity softball field and Silva Valley Parkway (Inspect to ensure vegetation adequately covers the native material.)	Yes ¨ No ¨	OK ¨	
(41) Varsity softball infield and batting cages (Inspect covering material to ensure that no filter fabric or native soil is exposed. Inspect to ensure that concrete is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(42) NOA soil containment area between varsity and JV softball fields (Inspect fencing to ensure that exclusionary structures are intact and adequate to prevent unauthorized access. Inspect to ensure vegetation adequately covers the native material.)	Yes ¨ No ¨	OK ¨	
(43) JV softball infield and area behind backstop (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(44) Varsity softball field access road (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	

Oak Ridge High School N.O.A. Quarterly Inspection Form Date _____
Initials _____

AREA	Any disturbance of soil	Condition of encapsulation	Comments / Solutions
(45) JV Baseball infield and area behind backstop (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(46) Maintenance Area, Snack Shack Area and Access Road to Visitors' Side outside of football stadium fence (Inspect covering material to ensure that no filter fabric or native soil is exposed. Inspect to ensure that asphalt is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(47) Access Road from football stadium to upper rugby/soccer field (Inspect to ensure that asphalt is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(48) North side of JV Baseball field access road to creek (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(49) Walking path along Meadow Wood Drive (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(50) South side of varsity baseball field, including batting cages and warm-up area (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(51) Baseball field access road (Inspect to ensure that asphalt is intact and that native soil is not exposed.)	Yes ¨ No ¨	OK ¨	
(52) Varsity baseball infield and area behind the backstop (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(53) Upper soccer field south side fill slope (Inspect to ensure vegetation adequately covers the native material.)	Yes ¨ No ¨	OK ¨	
(54) Chain link fence surrounding soccer field cut and fill slopes (Inspect fencing to ensure that exclusionary structures are intact and adequate to prevent unauthorized access.)	Yes ¨ No ¨	OK ¨	

Oak Ridge High School N.O.A. Quarterly Inspection Form

Date _____

Initials _____

AREA	Any disturbance of soil	Condition of encapsulation	Comments / Solutions
(55) Upper soccer field west side cut slope (Inspect vegetation on hillside and ensure erosion control fabric remains intact and useful for its intended purpose.)	Yes ¨ No ¨	OK ¨	
(56) Upper soccer field playing surface (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(57) Lower soccer field west side cut slope (Inspect vegetation on hillside and ensure erosion control fabric remains intact and useful for its intended purpose.)	Yes ¨ No ¨	OK ¨	
(58) Lower soccer field west side, Gunite encapsulate (Inspect to ensure that concrete is intact and that native soil is not exposed; inspect covering material to ensure that no native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(59) Lower soccer field playing surface (Inspect covering material to ensure that no filter fabric or native soil is exposed.)	Yes ¨ No ¨	OK ¨	
(60) Lower soccer field east side fill slope (Inspect to ensure vegetation adequately covers the native material.)	Yes ¨ No ¨	OK ¨	
(61) Lower soccer field south side cut slope (Inspect to ensure vegetation adequately covers the native material.)	Yes ¨ No ¨	OK ¨	

Comments/Notes:

Inspection Performed By:

Date Inspection Completed:

NOA Coordinator Initials and Date:

Appendix D

ORHS NOA Construction, Improvement, Alteration (NOA-CIA) Permit Application

Oak Ridge High School
Naturally Occurring Asbestos (NOA)
Operations and Maintenance (O&M) Plan

Appendix E

Standard Operating Procedures (SOPs) for Routine NOA Intrusive Maintenance Work

Oak Ridge High School
Naturally Occurring Asbestos (NOA)
Operations and Maintenance (O&M) Plan

Routine Maintenance

Routine maintenance repair projects are defined as any work by trained site staff that will disturb NOA-containing soil.

Routine Maintenance repair work may be conducted by the trained maintenance staff without the review of the NOA Plan Coordinator. In addition, no off-site soils will be brought onto the ORHS campus without the written consent of the O&M Plan Coordinator. The O&M Plan Coordinator shall assure that all imported soils are tested for NOA content prior to them being imported to the campus. See Section 3.6 for imported fill criteria.

Whenever possible, routine O&M activities shall be scheduled and performed during periods of time when school is not in session. If that is not possible, the work site shall be confined by creating an exclusion zone with barrier to prevent access by nonessential personnel.

Planting of Trees, Shrubs, Bulbs, and Plants

1. Use a common-sense approach.
2. Area disturbed must be sufficiently wet to prevent any visible dust.
3. Place all soil removed for repair onto a piece of plywood or plastic.
4. If area is left unattended, use caution barrier tape to prevent entry from students or staff.
5. After work is complete, rinse all tools and plywood.
6. Place excess soil in stockpile area and overseed to promote vegetative growth.
7. Discard plastic by folding inward to prevent NOA debris from leaving plastic.
8. Wash hands thoroughly with soap and water.

Ground Cover or Sod

1. Rake ground cover into a pile away from sub-surface soil to prevent mixing of two layers of soil.
2. Remove turf in 1" to 2" thick sections to minimize bare spots after making necessary repairs.
3. If underlying geotextile fabric is to be cut for repairs, cut the fabric to allow it to be folded back in place after repairs are made.
4. Keep native soils beneath the fabric separate from soil above the fabric.
5. Place all soil removed for repair onto a piece of plywood or plastic.
6. After repairs are made, replace native soil and compact it.
7. Fold geotextile fabric back in place.
8. Replace "clean" soils above the geotextile fabric.
9. Replace sod or ground cover.
10. Place excess soil in stockpile area and overseed to promote vegetative growth.
11. Rinse tools, plywood, etc., and discard plastic by folding inward to hold debris.
12. Thoroughly rinse shoes and clothes and wash hands with soap and water.

If a routine maintenance project develops into a project lasting more than seven calendar days, *additional engineering controls may be required*.

1. Contact the NOA Coordinator for immediate direction.
2. The NOA Coordinator will contact DTSC for guidance on an approved large scale workplan if required.
3. Cover and secure the removed soil with plastic to prevent wind and other disturbance from impacting soils.
4. Use caution barrier tape to demarcate the area to keep students and staff out, or backfill the area to its original condition until repair parts are acquired.

Appendix F

Standard Operating Procedures (SOPs) – for Short-Term NOA Intrusive Work

Oak Ridge High School
Naturally Occurring Asbestos (NOA)
Operations and Maintenance (O&M) Plan

[1] Any changes to the SOP for a NOA intrusive project must be approved by DTSC (Section 3.7 and Appendix H.1.4) and documented in the Completion Report (Appendix H 1.4).

STANDARD OPERATING PROCEDURE (SOP)
FOR SHORT – TERM NOA INTRUSIVE WORK
AT OAK RIDGE HIGH SCHOOL

1.0 INTRODUCTION

1.1 Objectives

The primary goal of this Standard Operating Procedure (SOP) is preventing uncontrolled exposures to asbestos particles from soils containing NOA and to protect the health of students, faculty, staff, O&M personnel, and visitors at the school site. This SOP will be available for public review, with copies maintained at the school site and school district offices.

1.2 Naturally-Occurring Asbestos (NOA) Hazard Summary

Asbestos is the common name for a series of naturally-occurring iron-magnesium-silicate minerals. Six asbestos minerals are currently referenced in state regulations; see Title 22 California Code of Regulations (CCR), Section 66261.24(a)(2) and Appendix X to Chapter 11, Title 22, Division 4.5, CCR. These six minerals are classified in two different groups based on their fiber characteristics: a) chrysotile belongs to the "serpentine" mineral group; b) the remaining regulated asbestos minerals (amosite, crocidolite, actinolite, anthophyllite, and tremolite) belong to the "amphibole" mineral group. All regulated forms of asbestos are considered hazardous, and classified as known human carcinogens by state, federal, and international agencies. As defined in H&SC Section 25316 and Section 25260 respectively, asbestos is both a hazardous substance and a hazardous material.

Human health effects of asbestos are dependent primarily upon exposure to airborne asbestos fibers, which can be inhaled deeply into lungs. Exposure to asbestos through inhalation can result in health impacts, including respiratory disease (asbestosis, a non-cancerous fibrosis of the lungs) and lung cancer (mesothelioma, cancer of the lung lining). Breathing of asbestos dust has been related to scarring of lung tissue (asbestosis). In addition, asbestos and tobacco smoke have a strong interactive synergism, which can produce even higher incidences of lung cancer. The longer a person is exposed to asbestos, and the greater the intensity of exposure, the greater the chances for development of health problems.

1.3 Intrusive Work Activities

1.3.1 Intrusive Work Activities

Construction, repair, and/or maintenance activities at the school site are restricted by DTSC in accordance with the O&M Plan only when exposures of

NOA-containing soils are reasonably anticipated or when releases occur. Notification to DTSC as described in Appendix H of construction, repairs, and maintenance activities is not required unless NOA soils are expected to be disturbed, or are inadvertently disturbed.

O&M personnel will submit all NOA intrusive school site construction and maintenance work order requests to the NOA Coordinator using the ORHS NOA Construction, Improvement, Alteration (NOA-CIA) permit application (Appendix D). Work order requests are not required for Routine NOA Intrusive Maintenance Work conducted by trained workers. The NOA Coordinator will evaluate in writing whether or not activities described in the NOA-CIA are considered "non-NOA intrusive" or "NOA intrusive".

"NOA intrusive" work includes any construction or maintenance work activities that disturb NOA-containing soils, including but not limited to: digging, excavating, grading, repairing, removing, trenching, filling, gardening, and other soil movement that may penetrate or otherwise compromise the caps in place, thereby opening pathways for possible human exposures to NOA.

If work is determined to be NOA intrusive, the NOA Coordinator will ensure that work practices are followed as specified in Sections 3.4 through 3.5 of the O&M Plan. The NOA Coordinator will provide advance notice of scheduled work exceeding seven days in duration to DTSC in accordance with provisions in Appendix H of the O&M Plan.

"NOA intrusive" activities are prohibited at the school site unless conducted in accordance with applicable provisions of the O&M Plan.

1.3.2 Non-NOA Intrusive Work

"Non-NOA intrusive work" is defined as including construction, repairs, and/or maintenance activities at the school site where exposure of NOA-containing soils is not anticipated and where the integrity of engineered controls, such as hardscaped or landscaped caps, is not compromised. Non-NOA intrusive work includes work where the geotextile/marker, if present, will not be penetrated or breached, even though work may be performed in upper layers of a cap system, e.g., clean fill. School district policies require the following procedures be taken when conducting non-NOA intrusive work at the school site.

- NOA Coordinator or designee will provide information regarding location of cap systems and soils containing NOA to maintenance workers or appropriate employees and selected contractors and O&M personnel to minimize likelihood of NOA intrusion.

- O&M Professional and/or O&M personnel will conduct inspections during construction and/or maintenance activities at the school site to ensure NOA-containing soils are not being disturbed.

- In the event that NOA-containing soils are inadvertently disturbed, the integrity of engineered controls is compromised, or a geotextile/marker is breached, the NOA Coordinator will be responsible for notifying DTSC in accordance with provisions in Appendix H.

1.3.3 NOA Intrusive Work

The following procedures are required by the school district when performing NOA intrusive construction, repair, or maintenance activities to:

a) ensure that safeguards are in place to prevent or minimize NOA exposures to anyone at the school site;
b) prevent untrained or unauthorized personnel from performing intrusive work in NOA areas; and
c) restore the integrity of engineering controls (cap systems) in place if impaired or compromised by such activities.

These procedures will be overseen by the NOA Coordinator for all NOA intrusive work (as defined in Sections 3.4 through 3.5) performed by, or on behalf of, the school district at the school site:

- provide information regarding location of cap systems, cross-section construction details, and locations of all soils containing NOA to selected contractors and O&M personnel.

- verify that O&M personnel and selected contractors and their employees will comply with federal and state OSHA requirements.

- require school district employees to follow established site-specific health and safety requirements (see Appendix N) before starting NOA intrusive work.

- require that construction and maintenance work be performed under and in accordance with a DTSC-approved SOP.

- evaluate timelines, school and work schedules to ensure that NOA intrusive work is completed as soon as possible to minimize exposure risks.

- require reasonable restrictions to school site access to reduce exposures to non-workers.

- implement dust control practices that utilize water.

- manage any NOA-containing or impacted soils brought to the surface in accordance with the soil management plan in SOP Sections 3.4 through 3.5 and in compliance with applicable, relevant, and appropriate provisions of state and federal law.

- comply with all applicable, relevant, and appropriate federal, state, and local requirements, such as the California Air Resources Board (CARB) Final Regulation Order, Section 93105, *Asbestos Airborne Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations*; also Section 93106, Asbestos Airborne Toxic Control Measure for Surfacing Applications and El Dorado County Rule 223-2, *Fugitive Dust – Asbestos Hazard Mitigation* (Appendix M).

1.4 NOA Coordinator

Director of Maintenance & Operations
El Dorado Union High School District
6540 Commerce Way
Diamond Springs, CA 95619
(530) 622-0140
Facsimile Number (530) 622-2319

In event of the absence of the Director of Maintenance, NOA Plan Coordinator responsibilities will be termporarily performed by the EDUHSD Associate Superintendent of Business. The On-Site NOA Plan Contact is the Principal of ORHS whose office is located in the administration building on the ORHS campus.

The responsibilities of the NOA Plan Coordinator are as follows:

- reporting planned activities that will potentially disturb NOA to the appropriate regulatory agencies, if required, including the El Dorado County Air Pollution Control Officer (APO) and the DTSC, prior to commencement of the activities.

- notify teachers, students, parents, maintenance personnel, and administrators of the implementation of the plan and answer questions about plan requirements;

- ensure that any contractors or community/parent groups working at the school are aware of the plan;

- maintain records associated with the plan, including mitigation reports, air sampling reports, periodic surveillance documentation, etc.;

- coordinate project-related air monitoring and periodic surveillance activities;

- coordinate maintenance activities involving the disturbance of potentially NOA contaminated soils; and,

- coordinate all maintenance staff NOA awareness training.

Campus occupants such as teachers, maintenance staff, athletic coaches, community/ parent groups, the principal, and other administrators also have responsibilities under the O&M Plan. Campus occupants must ensure they do not conduct activities which may disturb potentially NOA contaminated soils without first contacting the NOA Plan Coordinator or his/her designated representative. The following table includes personnel included in the plan and their basic responsiblilities.

EDUHSD NOA O&M Plan Personnel Responsibilities	
NOA Plan Coordinator	The NOA Plan Coordinator is responsible for the implementation and maintenance of the ORHS NOA O&M Plan. This includes approval of all non-emergency work requests and all notification and record keeping requirements.
On-Site NOA Plan Coordinator	The On-Site NOA Plan Coordinator is the primary contact with community and parent groups in regards to the ORHS NOA O&M Plan and its requirements. The On-Site NOA Plan Coordinator reports to the NOA Plan Coordinator on all areas.
ORHS Maintenance Staff	The ORHS Maintenance Staff are responsible for conducting and recording monthly inspections of the NOA mitigation controls at ORHS. Under this Plan the Maintenance Staff reports to the NOA Plan Coordinator and On-Site NOA Plan Coordinator.
ORHS Campus Occupants	Campus occupants such as the teachers, athletic coaches, other staff, and community/parent groups are responsible for conducting all ORHS campus activities in accordance with this NOA O&M Plan.

1.5 O&M Professional

Martha A. McDonnell
Associate Engineer, P.E. 042560
Cell Phone: (916) 417-2534
mam@youngdahl.net

Jason Little
Project Geologist P.G. No. 8348
Cell Phone: (916) 439-0428
jdl@youngdahl.net

David C. Sederquist
Senior Project Geologist, C.E.G. No. 2133
Cell Phone: (916) 417-1260
dcs@youngdahl.net

Robert Chris Mallory
Project Geologist, Registered Professional Geologist, CA 7285

Youngdahl Consulting Group, Inc.
1234 Glenhaven Court
El Dorado Hills, CA 95762
(916) 933-0633
Facsimile Number (916) 933-6482

Pursuant to Business and Professions Code, Chapters 7 and 12.5, and the California Code of Regulations, Title 16, Chapters 5 and 29, the O&M Professional is a California-registered professional with expertise in NOA investigation and remediation, e.g., engineer or geologist, who is familiar with the cap systems installed at the school site. The O&M Professional has additional expertise and experience with slope stability [if applicable]. To demonstrate expertise in NOA investigation and remediation, the resume of the O&M Professional, and the statement of qualifications of the consulting firm responsible for his/her work are included as Appendix L.

The responsibilities of the O&M Professional are to:

- conduct annual inspections (including five-year reviews);
- prepare and sign Annual Inspection Summary Reports and Five-Year Review Reports; and
- other environmental professional work related to NOA matters at the school site.

1.6 NOA Contractor Qualification

Asbestos awareness training is recommended for all contractors who may come into contact with NOA-containing soils at the school site. In accordance with California Code of Regulations (CCR), Title 8, Subchapter 4, *Construction Safety Orders*, Section 1529(k)(9)(g), persons who may at any time be exposed to concentrations greater than the permissible exposure limit (PEL) for asbestos (0.1 fibers/cc in eight hours) must attend asbestos awareness training within 60 days of hire, and must also attend annual refresher training.

Training provided to contractors will be commensurate with the work class and shall include, but not be limited to, the following subjects:

- methods of recognizing NOA;
- school site NOA locations;
- health effects associated with asbestos exposure;
- appropriate hazard controls; and
- work practices to avoid disturbing NOA and prevent NOA exposures (e.g., wet methods; protective clothing; respirators; proper cleanup and disposal; decontamination of equipment and clothing; relationship between smoking, asbestos, and cancer).

1.7 Modified or New SOP

It is the responsibility of the NOA Coordinator to notify the Department of Toxic Substances Control (DTSC) if there is any change to the Standard Operating Procedure (SOP), whether or not the change is permanent (new) or temporary (modified). It is required that the DTSC be notified of any modifications to the SOP 14 days before intrusive work begins, regardless of the duration of the project. The DTSC requires 30 days' prior notice of a new SOP, regardless of the duration of the project.

2.0 NOTIFICATION

2.1 Notification to DTSC

2.1.1 NOA Intrusive Work Duration Longer Than Seven Days

If scheduled NOA intrusive work exceeds a duration of seven days, it is the responsibility of the NOA Coordinator to notify the DTSC. In instances where an unscheduled repair is required due to soil disturbance from an unplanned event (i.e., emergency repair of sewer line), it is the responsibility of the NOA

Coordinator to notify DTSC if the problem is not repaired within a period of 14 days after the discovery of the problem.

2.1.2 Implementation of Modified or New SOP

In the event that a new SOP or modification to an existing SOP is implemented, contact the Plant Supervisor, the On-Site NOA Coordinator (Principal), and the NOA Coordinator (Director of M&O). It is the responsibility of the NOA Coordinator to make sure that the new or modified SOP is given to all necessary parties.

2.1.3 Notice of Contingencies or Emergencies

In the event of an emergency that disturbs potential NOA containing soils, contact the Plant Supervisor, the On-Site NOA Coordinator (Principal), and the NOA Coordinator (Director of M&O). The NOA Coordinator will evaluate the situation, document the repair plan, and then notify the DTSC, the AQMD, the CAC, and the CRG, when required.

2.2 Public Right to Know

2.2.1 Notification to School Community Members

Appropriate public participation activities shall be conducted as needed.

2.2.2 Notification to Contractor

Any contractor working at the school site will be made aware of the different engineering controls for NOA and how to avoid them if possible. The contractor and his/her employees must comply with federal and state OSHA requirements.

3.0 WORK ORDER

The EDUHSD requires the submittal of an ORHS NOA Construction, Improvement, Alteration (NOA-CIA) Permit Application informing them of the nature of the work to be done and whom the work is to be completed by. The application shall be submitted to the NOA Plan Coordinator, who must provide approval in writing prior to initiating a construction project.

A copy of this form is included in this Short-Term SOP.

4.0 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

4.1 Health and Safety Requirements

This document is provided as a basis of worker health and safety for maintenance workers of the El Dorado Union High School District for work activities that may impact naturally occurring asbestos (NOA) at Oak Ridge High School (ORHS). Native soils at the site have been previously sampled and asbestos has been identified at the school site. Remediation work during 2003 by the School District and in 2004 by the U.S. EPA have resulted in the key areas of native soils covered over with clean soil, asphalt, asphalt concrete, concrete shotcrete, bark and vegetation, or top soil/lava rock for the baseball infields. Below these enclosed areas of soil, bark, and vegetation, there is geotextile fabric that is present as an indicator of the native soils beneath it. As a result of these mitigation efforts in 2003 and 2004, the potential for exposure to NOA containing campus soil has been minimized.

The purpose of this Health and Safety Plan is to address health and safety requirements for those activities that will result in disturbing any native soils that are currently covered.

4.1.1 Activities Identified Which May Disturb NOA

Custodians

The primary functions of custodial staff at the campus involves sweeping, clean-up of walking surfaces from inclement weather, cleaning interior of buildings and cleaning exterior of buildings.

The potential impact to NOA by the Custodial Staff at the school site is considered minimal. Since the school site has been mitigated, there are no exposed areas of NOA that would result in "tracking" NOA material into the buildings on the shoes of students and staff. Extensive air sampling inside of classrooms conducted during 2003 and 2004 did not identify significant levels of asbestos inside of the classrooms during aggressive sampling conditions. Future cleaning of the interior of the classrooms by dusting, vacuuming, and sweeping by the custodial staff using existing methods is not anticipated at causing elevated exposures to asbestos.

Maintenance Staff and Athletic Maintenance and Grounds

The maintenance staff at the school site are the primary workers who might impact NOA at the school site through planned projects and unplanned emergency projects. The primary duties identified for maintenance staff that may impact NOA include, but are not limited to:

Sprinkler Repair
Dragging Baseball and Softball Infields
Planting Trees and Shrubs

Cleaning Sidewalks
Mowing Lawns
Over-seeding and Top-dressing Lawns
Weed Eating
Fence Repair
Shredded Bark Replacement
Tool and Equipment Cleaning and Repair

4.1.2 Responsibilities of Key Personnel

The NOA Plan Coordinator (Director of Maintenance and Operations) will be in charge of all operations at the school and oversee enforcement of the health and safety of all employees who may impact NOA. The onsite Maintenance Staff Supervisor is responsible for day to day enforcement of the health and safety provisions of all work activities on the school site.

4.1.3 Hazard Evaluation

1. Airborne dust levels have been identified as the primary means of potential exposure to asbestos during disturbance of NOA. Reduction of airborne dust levels by water suppression methods is the method of choice for minimizing airborne dust. Hand watering using hoses attached to existing water faucet hose bibs, or by Hudson type sprayers will be used to wet those areas where NOA will actively be disturbed. Visible dust emissions of suspect or known areas of NOA is not allowed during any phase of work activity. It is not anticipated visible dust emissions will be a major factor when the water suppression measures are employed.

2. Mechanical safety hazards and other hazards associated with the various work activities the maintenance staff may potentially face with regards to the operation of personal vehicles, trucks, and other heavy equipment shall be addressed by the maintenance staff and shall be covered by their own Injury and Illness Prevention Program (IIPP). These items will not be addressed in this document.

4.1.4 Personal Protection Requirements

The following requirements apply for personal protection of maintenance staff when NOA will be disturbed:

1. Based on the very limited amount of disturbance of suspect or known NOA and the strict requirement for water suppression and no visible dust emissions, respirators <u>will not</u> be required for any of the small scale activities anticipated on the campus during earth disturbance by the maintenance staff. Based on previous personal and area air

monitoring by HMS, Inc. at ORHS during construction excavation activities in 2003, no significant levels of airborne asbestos are expected.

The primary basis for not requiring respirators will be no visible dust emissions when disturbing suspect areas of NOA or known areas of NOA. No work shall be allowed to proceed if there are visible dust emissions generated and all work shall stop until sufficient wetting of the soils is achieved. The exposed NOA soils shall be adequately wetted to assist in no visible emissions, but care should be made so as not to add too much water to make the work difficult.

2. The workers shall wear high leather work boots or rubber boots depending upon the work activity and wetness (muddy conditions). Leather gloves and rubber gloves shall be made available for use by the workers and will be used as the conditions dictate. In most cases, gloves may not be necessary. Good personal hygiene is necessary for all maintenance staff who will be disturbing NOA.

3. Washable and reusable coveralls will be made available for the maintenance staff to wear over their street clothes for employees who would like to wear them, and will be required on specific projects that will result in getting mud on their street clothes. The school district is responsible for cleaning and drying the coveralls onsite.

4.1.5 Decontamination Procedures

Clean potable water shall be available in the immediate work area to provide washing of lower arms and hands of workers at the end of each work period and will be self-enforced.

Vehicular decontamination procedures shall include washing the tires at the site to prevent tracking out onto paved and non-paved access roads and paths to the different work areas. Since any work activity conducted by the maintenance staff will include collection and stockpiling NOA soils onto either plastic or sheets of plywood, the likelihood of significant track-out potential is very low.

4.1.6 Tailgate Meetings

The NOA Plan Coordinator and onsite Maintenance Supervisor shall hold an initial “tailgate” meeting to discuss the specific requirements of this Health and Safety Plan, dust mitigation measures, required personal protective equipment, and personal hygiene requirements for every project where NOA will be impacted.

A worker sign-in sheet will be used to document participation in all tailgate meetings and the topics discussed.

4.1.7 Protection from the Public

The uninvited public, students, and staff will not be allowed in the immediate work areas on site and will be asked to leave by the school district maintenance personnel conducting the work. The work area shall be delineated using construction "cones," construction ribbon, and/or fencing to keep people out of the immediate work area.

4.2 Dust Control– Non-NOA Intrusive

Dust control for construction projects is regulated by the El Dorado Air Quality Management District, and the requirements are stated in Rule 223-2, *Fugitive Dust*. The purpose of this Rule is to reduce the generation of particulate matter entrained into the air as a result of man-made fugitive dust sources. The provisions of this Rule are applicable to specified outdoor fugitive dust sources.

4.2.1 Dust Mitigation Plan – Air Quality Management District

An owner/operator shall submit a Fugitive Dust Control Plan to the Air Pollution Control Officer prior to the start of any construction activity for which a grading plan has been issued by El Dorado County.

4.2.2 Wet Control

Enough water shall be supplied via water truck or irrigation system to adequately dampen any disturbed soil so as to not generate dust.

4.2.3 Engineering Controls

The engineering controls that have been put into place at the school that may possible be encountered during non-NOA intrusive work include:

- Geotextile visible barrier;
- Imported clean fill;
- Landscaping; and
- Hardscaping.

4.2.4 Cease Operation

When sustained wind speeds result in visible dust emissions that leave the property despite the application of dust suppression measures, activity except for application of water shall be suspended (Rule 223-2, *Fugitive Dust*).

4.3 Dust Control – NOA Intrusive Activities

Asbestos dust control for construction projects is regulated by the El Dorado Air Quality Management District, and the requirements are stated in Rule 223-2, *Fugitive Dust – Asbestos Hazard Mitigation*. The purpose of this Rule is to reduce the amount of asbestos particulate matter entrained into the air as a result of any construction or construction related activity that disturbs or potentially disturbs naturally occurring asbestos.

4.3.1 Asbestos Dust Hazard Mitigation Plan – Air Quality Management District

An owner/operator shall submit an Asbestos Dust Hazard Mitigation Plan to the Air Pollution Control Officer prior to the start of any construction activity that is in excess of 20 cubic yards of graded material or if required by the Air Pollution Control Officer and meets the criteria set forth in Rule 223.2.1.B.2.

4.3.2 Wet Control

Enough water shall be supplied via water truck or irrigation system to adequately dampen any disturbed soil so as to not generate dust.

4.3.3 Engineering Controls

The engineering controls that have been put into place at the school that may possibly be encountered during NOA intrusive work include:

- Geotextile visible barrier;
- Imported clean fill;
- Landscaping; and
- Hardscaping.

4.3.4 Cease Operation

When sustained wind speeds result in visible dust emissions in excess of the standards in Rule 223-2.4 A, despite the application of dust mitigation measures, grading and earthmoving operations, except for dust mitigation activities, shall be suspended.

4.4 Run-on and Runoff Control

4.4.1 Storm Water Pollution Prevention Plan (SWPPP)

For any earthwork activity that exceeds 1.0 acre of disturbed material, a Storm Water Pollution Prevention Plan and permit are required by El Dorado County. However, even if the area of disturbed material does not exceed 1.0 acre, all construction activities still have to meet water quality standards. The State of California Water Resources Control Board (SWRCB), in conjunction with the National Pollutant Discharge Elimination System (NPDES), has adopted a statewide General Permit to Discharge Stormwater Associated with Construction Activity (General Permit) to address discharges of storm water runoff associated with applicable construction activities. The Regional Water Quality Control Board (RWQCB) is the responsible agency for implementing and enforcing General Permit provisions. The General Permit requires all dischargers where construction activity disturbs one acre or more to develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) to prevent discharge of sediments to the storm drains and drainages in the area. California Stormwater BMP Handbook, Construction Manual, may be obtained from http://www.cabmphandbooks.com. It is suggested that the contractor obtain copies of this manual. Other appropriate publications exist and may have applicable BMP methods.

4.5 Soil Management Plan

If NOA is identified as a compound of concern (COC) for the project, specific health and safety (H&S) requirements should be followed in handling the COC. A H&S Plan is provided in this SOP (Section 4.1) per requirements of California Occupational Safety and Health Administration (Cal/OSHA).

4.5.1 NOA-Containing Soils Stockpiling Operation

If NOA is handled by grading or other development operations (e.g., stockpiling) within the same general area of concern, it will not be subject to hazardous waste regulations. No specific offsite disposal is required. No “waste” has been generated at this point.

According to the El Dorado County AQMD Rule 223-2 Best Management Practices for Asbestos Dust Mitigation, soil staging and storage operations must be stabilized. Stockpiles that are within 100 yards of off-site occupied buildings must not be greater than eight feet in height, and must have a road bladed to the top to allow for a water truck to have access or have an operational irrigation system that is capable of complete stockpile coverage. It is recommended that any removal or addition of material to the stockpile occur on the downwind side of the storage area to minimize dust exposure. It is also recommended that there be regular maintenance of the stockpile to prevent any material from sliding.

- Excavated soil should be accumulated on an impermeable surface, e.g., plastic tarp, dumpster, concrete foundation.

- Excavated soil should be covered (e.g., with plastic tarp or building roof) to prevent windblown dispersion, and bermed to prevent run-on and runoff.

- The contractor should inspect the stockpiled soil area routinely (e.g., daily) and after storms to ensure that controls for windblown dispersion and precipitation run-on and runoff are functioning properly.

4.5.2 On-Site Disposal of NOA-Containing Soils

If at all possible, place any excavated soils into fills constructed elsewhere on the property. If this is not possible, management and disposition of excavated soils transported off-site must be in accordance with federal, state, and local law. An area has been designated (Appendix B, Area # 42, "Oak Ridge High School Site Map") for the disposal of small amounts of NOA-containing soils generated by maintenance activities.

4.5.3 Off-Site Disposal of NOA-Containing Soils

After completion of grading or mitigation actions, excessive soil containing NOA should be managed properly for off-site disposal. Hazardous waste requirements do not apply to the movement or disposal of NOA-containing earthen materials during land development and construction activities (assuming no other hazardous constituent than asbestos presents). Excessive NOA materials may be disposed of at a landfill (Class I, II, or III) permitted to accept such a waste. Local air quality management district (AQMD) or California Air Resources Board (CARB) may have specific prohibitions (e.g., Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations) for applications or uses of NOA (e.g., use as road-base fill material).

Soils that have an asbestos concentration of greater than or equal to 0.25% to less than 1.0% must not be reused for surface applications (CCR Title 17, Section 93106). If transported off-site, the recipient of this material must be provided with a written Warning Statement per CCR Title 17, Section 93106(d)(3). A copy of the Surfacing/Non-Surfacing Application is attached. Soils that have a concentration of asbestos that is 1.0% or greater are classified as an Asbestos Containing Material (ACM) and are not to be reused for surfacing applications. If the material is to be transported off-site, it must be treated as a hazardous substance. All off-site transportation must be in compliance with applicable Department of Transportation (DOT) regulations (49 CFR 172).

Documentation for off-site disposition must be in compliance with Rule 223-2.6.D.3.

5.0 IMPLEMENTATION OF SOP

5.1 Field Documentation

5.1.1 Field Logs

It is important that all NOA intrusive work be documented. Daily field reports should contain key information including, but not limited to:

- Project name;
- Project location;
- Contractor;
- Name of the person who approved the work;
- Any persons present at the site;
- Weather;
- Field Representative; and
- Detailed description of the events that took place during the course of the day.

The daily field log should be filled out by a competent person and submitted to the NOA Coordinator.

5.1.2 Photos

Photo documentation should be completed periodically in order to have a visual account on file of what tasks were performed throughout the project. These photos should be filed with the NOA CIA Permit Application submitted to the NOA Coordinator.

5.2 Site Preparation

Primary consideration will be given to the protection of building occupants and workers. The following steps shall be taken for any work that may involve disturbing NOA-containing soil:

- Restrict entry to the area for all personnel other than those needed to perform the work.

5.2.1 Work Area Delineation and Security Measures

The uninvited public, students, and staff will not be allowed in the immediate work areas on-site, and will be asked to leave by the construction superintendent or designee.

The plant supervisor, site principal, and NOA Coordinator should be informed of all unauthorized persons who enter the immediate work area. The work area shall be delineated using construction "cones," construction ribbon, and/or fencing to keep people out of the immediate work area.

5.2.2 Utility Survey and Clearance

Prior to initiating any NOA intrusive work, review the school site plans for the location of any:

- NOA mitigated areas;
- Utility lines; and
- Previously undisturbed areas.

5.3 Decontamination

5.3.1 Work Area

Decontaminate the work area by using water and spraying any dirt toward a NOA containment area. Do not dry sweep any material, as that will generate dust.

5.3.2 Decontamination of Workers

Clean potable water shall be available in the immediate work area to provide washing of lower arms and hands of workers at the end of each work period and will be self-enforced.

5.3.3 Decontamination of Equipment and/or Truck

Vehicular decontamination procedures shall include washing the tires at the site to prevent tracking out onto paved and non-paved access roads and paths to the different work areas.

5.4 Backfill, Compaction, and Site Restoration

Any disturbed area shall be restored to original condition. If any NOA engineering controls have been damaged, for example, any tears made in the geotextile fabric, they must be repaired or replaced so that it is restored to its original specification. All backfill and compaction shall meet all the specifications set forth in the original geotechnical report for the school.

5.5 Work Completion Inspection

For any NOA intrusive work completed, the NOA Coordinator shall inspect any site repairs or improvements to ensure that everything has been fixed and restored in an acceptable manner before that area is opened for public use.

Appendix G

Standard Operating Procedures (SOPs) – for Long-Term NOA Intrusive Work

Oak Ridge High School
Naturally Occurring Asbestos (NOA)
Operations and Maintenance (O&M) Plan

INTRODUCTION

This plan has been prepared to provide guidelines for preventing exposure to naturally occurring asbestos particles from soils containing NOA. This is primarily achieved by minimizing the generation of dust during NOA intrusive work activities. It is recommended that this document be reviewed thoroughly by all involved personnel prior to the start of work.

1.0 Pre-job Meeting, Health and Safety Meeting, and Regulatory Overview Meeting

Prior to the beginning of construction, there should be a pre-job meeting with representatives of all of the contractors, subcontractors, school district personnel, DSA inspectors, consultants, and regulatory agencies expecting to be working on this project. The purpose of this meeting being to review the project plans, the project schedule, discuss special health and safety requirements, special job site requirements, and the special procedures that will be used on the site. The first health and safety meeting should be held prior to the beginning of work on this project.

2.0 Site Preparation

If heavy equipment is to be used for the project, the first steps to begin construction should be to bring in equipment, to install wash pads and to connect to on-campus sources of water to prevent trackout. The staging areas should then be established. This should be followed by the clearing and grubbing of vegetation and/or demolition of existing structures from the construction areas.

Site security should follow standards of practice for normal construction in the area and will be at the discretion of each contractor.

Fences surrounding the workzones will have dust screens.

Classrooms in the close vicinity of earth disturbance should be protected by the following methods:

- The walls, windows, and air conditioning units closest to the earthwork should be covered with plastic to create a dust barrier.

- Portable classrooms that are moved should be sealed during earthwork operations if they have to remain unassembled. The floor coverings will be replaced after reassembly.
- Block buildings should have windows and doorways sealed on sides adjacent to earthwork.

3.0 Dust Control

Dust control will follow best management practices (BMPs) outlined in El Dorado County Air Quality Management Rule 223-2 for Fugitive Dust Asbestos Hazard Mitigation (Rule 223-2). Rule 223-2 includes tables of BMPs for construction and earth moving activities.

Additionally, for projects expected to disturb more than 20 cubic yards of native material, an Asbestos Dust Mitigation Plan (ADMP) must be filed and approved by the El Dorado County Environmental Management District prior to the start of earthwork operations.

For projects where construction traffic will be entering and leaving the site, tire wash stations should be used to prevent track out onto parking lots and roadways. Dust control will be achieved during extended periods of inactivity by the continued use of watering during these periods, covering with tarps or other materials, developing a wind resistant crust, or any combination thereof.

The precise dust control measures used are typically dependent on how soil is excavated and handled. This can be very dependent upon individual contractor's methods. Therefore a detailed plan will be prepared once a contractor has been selected.

Representatives of the El Dorado County AQMD will be enforcing the dust rules, can issue citations, and can stop work when rules are violated.

During weekends when no excavation activities are underway the following dust control options or combination of options may be used:

- Use of a contractor for the sole purpose of wetting and monitoring covered NOA soils during non-work hours.
- Set-up a temporary sprinkler system to wet the work areas during non-work hours.
- Cover and secure the areas with an impermeable barrier (e.g. plastic, etc.).
- Establish a wind resistant crust through the use of water and compaction equipment.

4.0 Recommended Permanent NOA Barriers

During construction operations, the minimization of potential asbestos dust emissions can best be achieved through barriers to dust generation. These barriers must be permanent and resistant to erosion. Barriers can require periodic monitoring and maintenance. In general, the barriers can be viewed as vegetative, asphaltic concrete, portland cement concrete, or exclusionary zones.

4.1 Geotextile Barriers

The primary barrier to the release of asbestos fibers in the fill areas will be by the placement of geotextile fabric in the subgrade prior to the finishing of fill construction using clean soil (see below). Up to three types of geotextile may be used:

A. Water permeable filter fabric for slopes with a gradient of less than 3H:1V, such as Mirafi 140NC or equivalent;
B. Three-dimensional filter fabric for slopes steeper than 3H:1V such as Enkamat 7020 or equivalent; and
C. Orange construction fencing on slopes with a gradient of less than 3H:1V where only a visual marker is desired.

This will aid in future O&M in that a visual marker will be provided that will assist in the future O&M not penetrating into material containing NOA. The three-dimensional fabric can also provide a barrier to limit the access to NOA containing soil by burrowing rodents.

4.2 Imported Clean Fill

A minimum of 6-inches of clean fill (not containing asbestos and meeting DTSC imported fill guidelines) should be used to cover all cut and fill areas not otherwise encapsulated. This fill should be vegetated sufficiently to prevent or control erosion.

4.3 New Shallow Utility Trenches

Where new near surface underground utilities are planned, such as irrigation systems and some electrical systems, the planned trench areas should be pre-excavated and backfilled with clean (see above) fill material to 6 inches below the planned utility depth prior to the installation of any clean fill. The width of such pre-excavations should be a minimum of 2 feet. The bottoms of such excavations will be lined with the geotextile fabric.

4.4 Cut Slope Protection

Cut slopes should be covered by retaining walls, shotcrete, and/or a three dimensional geotextile fabric with soil and vegetation, or appropriate vegetation/fencing. Lined brow ditches should be used to intercept sheet flow and prevent cut slope erosion.

4.5 Fill Slope Protection for Areas without Geotextile Barriers

Fill slopes that do not utilize geotextile barriers should be vegetated using erosion control blankets and a bonded fiber/seed mixture. Sheet flow from fields should not be allowed to drain down fill slopes. The tops and/or bottoms of the fill slopes should be fenced with locked gates to prevent access by unauthorized personnel. Only authorized personnel who have undergone the institutional training regarding asbestos safety should be allowed within the fenced areas on the fill slopes. Rodent control may be necessary to limit the transport of NOA containing soil to the surface.

4.6 Hardscape Areas

Paving, flatwork, and slab foundations can all be used to provide a barrier for the generation of dust. Hardscape barriers are typically planned out prior to the start of work. Refer to the O&M plan for hardscape maintenance requirements.

4.7 Landscaping

Where fills are constructed using NOA-containing material, a landscaping barrier may be used provided that sufficient barriers are included to prevent the migration of NOA to the surface. Low garden walls and bottomless planters may be used provided that the bottom soil contact areas are lined by geotextile to provide a barrier to the disturbance of NOA by cultivation activities. Bark may be substituted for soil provided the bark is periodically replenished. Tree planting locations should be over-excavated to planting depths and then backfilled with clean fill material.

4.8 Exclusionary Areas

Areas of the campus may be isolated by fencing to prevent access. Mulch, erosion control blankets, and the establishment of vegetation is recommended to prevent erosion and the resulting dispersal of NOA by water or wind. Gates should be installed to allow access by authorized individuals. Rodent control may be necessary to limit the transport of NOA containing soil to the surface.

4.9 O&M Containment Area

The existing operations and maintenance plans describes the existing containment area on the south side of the campus meant to store excavated soil containing NOA.

5.0 Planned Earthwork Activities

The following section describes the recommended order of operations for earthwork activities:

- Grading operations will start with the construction staking of the site to identify the magnitudes of the planned cuts and fills relative to the existing grades.

- During grading, water should be applied to control dust in the soil removal areas. Water will be applied in the fill areas to control dust and to allow optimum compaction to be achieved.

- When final subgrade elevations are reached (minus the amount for imported fill in the areas planned to have either turf or soil surfaces) the cut areas should be scarified and recompacted to 90 - 95% relative compaction. This should then be followed by the installation of all deeper underground utilities, such as main water lines, sanitary sewer, and storm sewer, prior to the placement of geotextile fabric.

- With the site at final subgrade (except for the encapsulating fills), footing trenches should be dug and all footings formed up. The shallow trench areas should then be pre-excavated. Lights and fences should be installed at this time. Excess soils generated by construction should be either off-hauled or placed into the storage area for excess soils.

- The site should then be ready for the covering with geotextile fabric, where applicable, followed by the importation of clean fill to bring the project to final grades and the installation of planters along with the slope covering systems. The last portions of fencing may be installed at this point, prior to the importation of clean fill.

6.0 Documentation of NOA Mitigation and Management During and After Construction

All earthwork construction and general construction that disturbs the soil should be periodically monitored by a California Professional Geologist or a trained technician working under the direct supervision of a California Professional Geologist. The geologist or technician should monitor where NOA is removed and where it is placed. The geologist or technician should observe and document all mitigation measures. At the completion of construction, a report should be submitted detailing where NOA was removed, where NOA was placed, and all final engineering control mitigation measures installed. Photographic documentation should be used where appropriate.

Fire hydrants or water trucks, equipped with hoses two to three inches in diameter, should be used to supply high volumes of water to wash down the affected areas of the campus upon the completion of the installation of the engineering controls. This may include buildings, patios, parking lots, and athletic field bleachers. Where runoff enters storm drains, sediment should be collected in filter bags installed in drain inlets.

Representatives of the El Dorado County AQMD will be enforcing the dust rules, can issue citations, and can stop work when rules are violated.

During weekends when no excavation activities are underway the following dust control options or combination of options may be used:

- Use of a contractor for the sole purpose of wetting and monitoring covered NOA soils during non-work hours.
- Set-up a temporary sprinkler system to wet the work areas during non-work hours.
- Cover and secure the areas with an impermeable barrier (e.g. plastic, etc.).
- Establish a wind resistant crust through the use of water and compaction equipment.

Appendix H

DTSC Notice and Reporting Requirements for NOA Intrusive Work

Oak Ridge High School
Naturally Occurring Asbestos (NOA)
Operations and Maintenance (O&M) Plan

H 1.1 Notification and Reporting of NOA Intrusive Work

Activities that disturb NOA containing soils are restricted by DTSC in accordance with the approved O&M Plan. The NOA Coordinator will submit notice to DTSC in writing in advance of any NOA-intrusive activity that is anticipated to exceed seven days in duration from start to completion whenever NOA intrusive work will be conducted at the school site, that is, where cap systems or geotextiles/markers may be breached or otherwise compromised during the course of construction, repair, or maintenance activities. All NOA intrusive work activities will be conducted in accordance with a DTSC-approved SOP (see Appendix E, F and G); advance notification to DTSC is required if the pre-approved SOP is modified or substantially rewritten.

H 1.2 Notification Timeframes

- Notification to DTSC is ***not*** required for the following activities at the site:
    - The activities are non-NOA work that are not anticipated to disturb potential NOA containing soils;
    - The projected NOA intrusive work duration is less than seven days from start to completion, and will follow the SOP.
- Notification to DTSC by the NOA Coordinator *is required* for the following activities:
    - Notify DTSC 14 days in advance if the activities are for NOA intrusive work, are anticipated to exceed seven days in duration from start to completion, and will follow the Short-Term or Long Term SOPs.
    - Notify DTSC at least 14 days in advance if the activities are for NOA intrusive work, and will follow a modified SOP. DTSC's approval of the modified SOP will be obtained prior to implementation of work.
    - Notify DTSC at least 30 days in advance if the activities are for NOA intrusive work, and will follow a new SOP. DTSC's approval of the new SOP will be obtained prior to implementation of work.

- o Notify DTSC of unplanned events (e.g., broken sewer line) if not repaired within 14 days; submit a Completion Report within 60 days after completion of work.

H 1.3 Electronic Mail Notice Format

Written communication to DTSC may be submitted via e-mail. A sample e-mail notification to DTSC project manager and unit supervisor might read as follows:

"The El Dorado Union High School District plans to perform maintenance at the Oak Ridge High School, 1120 Harvard Way, El Dorado Hills, California 95762, soccer field (see attached *pdf* figure showing the location) to repair one broken sprinkler head and add one new sprinkler head. As noted on the figure, the area has a geotextile/marker and a cap of six inches of clean fill over NOA-containing soils. We need to cut through the existing marker and remove approximately [two] cubic yards of NOA-containing soils during this activity. The action is proposed for [start date] and will be completed on [end date]. The marker will be restored by [brief description of restoration plan]. We will follow the SOP Workplan provided in the [name and date of O&M Plan approved by DTSC]. If you have any questions or would like to visit during the activity, please contact [name and address of NOA Coordinator and/or O&M Professional and contact telephone numbers] . . ."

H 1.4 DTSC Notice and Reporting Requirements for NOA Intrusive Work

Activity Onsite	NOA Intrusive Work			
	Duration ≤ 7 calendar days	Duration > 7 calendar days	Unplanned Events	Annual/Five Year Inspection
1.. **Notify DTSC**	Not Required	Yes – before work begins	If not repaired *within 14 days* after discovery	
1.a) Using Short Term or Long Term SOP Workplan,		14 days before work begins		
1.b) Using Modified SOP Workplan	14 days before work begins, regardless of duration			
1.c) Using New SOP Workplan	30 days before work begins, regardless of duration			
2. Reports	Document in Annual Report	Completion Report in Annual Report	Completion Report to DTSC wi/60 days and in Annual Report	Annual/Five-Year Report submitted wi/60 days of inspection

O&M Personnel Responsibilities

	NOA Coordinator	O&M Training Professional	Engineering Geologist	School Principal	Plant Supervisor	Assoc. Supt. of Business	Human Resources
1. Inspections, Maintenance, and Repairs							
Directs monthly, annual and 5 Year Inspections of engineered controls and completion of the inspection checklists in compliance with O&M Plan.	X		X				
Monitor onsite maintenance activities for compliance with dust mitigation and air monitoring requirements.				X	X		
Direct and oversee small scale maintenance activities involving disturbance of NOA-containing soils to ensure that SOP is followed.					X		
Direct and oversee immplementation of SOP in compliance with O&M Plan; obtain DTSC approval of work when required.	X		X			X	
Notify staff and parents regarding the existence of the O&M Plan; respond to questions.				X			
Perform Inspections, maintenance and repairs.					X		
2. Record Keeping and Checklists							
Maintain records of all O&M related activities.	X						
Document activities that will potentially disturb NOA containing soils.	X						
Submits completed inspection checklist and maintenance reports to NOA Coordinator.					X		
Document provision of NOA awareness training for designated contractors and staff.				X	X		
Document Acknowledgment of NOA O&M Plan for all Non-Maintenance staff and send copy to NOA Coordinator.	X						X
3. Reporting							
Coordinate reporting to regulatory agencies.	X						
disturb NOA containing soils but conducted pursuant to SOP.	X						
Notify regulatory agencies of planned or unplanned activities conducted in accordance with a workplan approved by DTSC.	X					X	
Develop, complete and submit periodic, annual and 5 Year reports.	X		X				
Report new employees to be trained on the O&M Plan.							X
4. Training							
Coordinate training and refresher requirements for district staff and site maintenance personnel.	X	X		X			
Track and schedule NOA O&M Plan Awareness for site staff.	X						
Coordinate NOA Awareness Training for designated contractors and community groups working at site.		X			X		X

Appendix I

O&M Personnel Responsibilities and Contact Information

Oak Ridge High School
Naturally Occurring Asbestos (NOA)
Operations and Maintenance (O&M) Plan

NOA Coordinator

Daniel Augino
Director of Maintenance & Operations
6540 Commerce Way
Diamond Springs, CA 95619
530-622-0140

On Site NOA Plan Coordinator

Stephen Wehr
Principal, Oak Ridge High School
1120 Harvard Way
El Dorado Hills, CA 95762
916-933-6980 extension 3010

On Site Maintenance Supervisor

Jamie Schanrock
Plant Supervisor, Oak Ridge High School
1120 Harvard Way
El Dorado Hills, CA 95762
916-933-6980 extension 3090

Other School District Staff:

Patty McClellan
Director of Facilities
4675 Missouri Flat Road
Placerville, CA 95667
530-622-5081 extension 7217

Jenisse Bovo
Director of Human Resources
4675 Missouri Flat Road
Placerville, CA 95667
530-622-5081 extension 7214

Engineering Geologist (see Appendix L for specific personnel information)

Youngdahl Consulting Group
1234 Glenhaven Court
El Dorado Hills, CA 95762
916-933-0633

Health and Safety Training Professional

Richard Beale
Senior Industrial Hygienist
Hazard Management Services, Inc.
4200 Rocklin Road, Suite 11A
Rocklin, Ca 95677
916-632-6800

Appendix J

Annual Expenditure Budget

Oak Ridge High School
Naturally Occurring Asbestos (NOA)
Operations and Maintenance (O&M) Plan

Budgeted Annual Expenditures

Employee Costs	
Monthly Inspections by EDUHSD Staff	$1,200.00
NOA Plan Coordinator	$1,000.00
Soil testing for Imported Soil (est. 5 times per year)	$5,000.00
Maintaining ground cover	$3,000.00
Registered Geologist – Annual Inspection and Report	$4,000.00
Staff Training	$2,500.00
DTSC Oversight (Direct Costs)	$1,500.00
DTSC Oversight (Indirect Costs)	$2,700.00
Total Budgeted Annual Expenditures	**$20,900.00**

This expenditure budget is for regular routine expenditures associated with the ORHS NOA O&M Plan. Costs associated with emergency and non-emergency projects disturbing soil would be budgeted on a case-by-case basis.

Appendix K

NOA Five Year Review Report Outline

Oak Ridge High School
Naturally Occurring Asbestos (NOA)
Operations and Maintenance (O&M) Plan

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Attachments

Appendix L (Attachments)

Resumes and Statement of Qualifications of O&M Professionals

Oak Ridge High School
Naturally Occurring Asbestos (NOA)
Operations and Maintenance (O&M) Plan

Appendix M (Attachment)

El Dorado County Air Quality Management District
Rule 223-2 – Fugitive Dust – Asbestos Hazard Mitigation

Oak Ridge High School
Naturally Occurring Asbestos (NOA)
Operations and Maintenance (O&M) Plan

EL DORADO COUNTY AIR QUALITY MANAGEMENT DISTRICT

RULE 223 – FUGITIVE DUST – GENERAL REQUIREMENTS

(Adopted September, 1982; Amended 07/19/2005)

INDEX **PAGE**

223.1 GENERAL

A. **PURPOSE:** The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

B. **APPLICABILITY:** The provisions of this rule are applicable to specified outdoor fugitive dust sources. The definitions, exemptions, requirements, administrative requirements, recordkeeping requirements, and test methods set forth in this rule are applicable to Rules 223, 223-1 and 223-2 of the Rules and Regulations of the El Dorado County Air Quality Management District.

223.2 EXEMPTIONS

The provisions of this Rule shall not apply to:

A. Agricultural activities conducted and maintained for commercial agricultural purposes excluding construction and construction related activities. If there is a question regarding whether an activity is an agricultural activity or a commercial agricultural activity, the Air Pollution Control Officer shall consult with the El Dorado County Agricultural Commissioner.

B. Active operations conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency, or to attend to uncontrolled fires.

C. Active operations conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions.

D. Fire hazard abatement, or vegetation clearing for fire defense purposes ordered by any state, county, or municipal fire department, or that is required by a local ordinance. The provisions of this clause shall not exempt the owner of any property from controlling fugitive dust emissions emanating from disturbed surface areas and inactive disturbed surface areas created as a result of the exempt activity.

E. Any active operation, open storage pile, or disturbed surface area for which necessary fugitive dust preventive or mitigating actions are in conflict with the California or Federal Endangered Species Acts, as determined by the State or Federal agency responsible for making such determinations.

F. Emergency maintenance of flood control or irrigation channels, canals and water spreading basins.

G. Unpaved roads, which are not part of construction and construction related activities, or where no nuisance or health hazard is created by its usage, until December 31, 2009 or adoption of a specific unpaved road rule, whichever is sooner.

223.3 DEFINITIONS

A. **ACCESS ROAD:** any road extending from a public thoroughfare onto the property of a construction project, quarry, or surface mining operation.

B. **ACTIVE OPERATIONS:** Any activity capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction activities, disturbed surface areas or heavy- and

light-duty vehicular movement on disturbed surface areas, including inactive disturbed surface areas, and unpaved roads within a construction or a development project.

C. **AGRICULTURAL ACTIVITY:** Any activity, operation, facility, or appurtenances thereof, including, but not limited to, the cultivation and tillage of the soil, dairying, the production, cultivation, growing, and harvesting of any agricultural commodity including timber, viticulture, apiculture, or horticultural, the raising of livestock, fur bearing animals, fish, or poultry, and game birds, and any practices performed by a farmer or on a farm incident to or in conjunction with those farming operations, including preparation for market, delivery to storage or to market, or delivery to carriers for transportation to market.

D. **BLASTING:** Blasting is a process used to create/clear an area by using explosives.

E. **BOUNDARY LINE:** The boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession. This may include all or portions of a legal parcel or parcels as defined by the El Dorado County Assessor.

F. **BULK MATERIAL:** Any material which can emit dust when stored, disturbed, or handled, and is generally un-packaged, including sand, gravel, soil, aggregate material less than two inches in length or diameter and other organic or inorganic particulate matter.

G. **CHEMICAL STABILIZERS:** A non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the Environmental Protection Agency, or any applicable law, rule or regulation; and should meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

H. **CONSTRUCTION OR CONSTRUCTION RELATED ACTIVITIES:** Any on-site mechanical activities preparatory to or related to the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities; grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking. This does not include EDCAQMD permitted stationary sources except for construction activities at the source.

I. **CONTRACTOR:** Any person who has a contractual arrangement to conduct an active operation subject to this Rule for another person.

J. **DISTURBED SURFACE AREA:** A portion of the earth's surface that has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emissions of fugitive dust. This definition excludes those areas that have:

1. Been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;

2. Been paved or otherwise covered by a permanent structure; or

3. Sustained a vegetative ground cover over at least 95 percent of an area for a period of at least 6 months.

K. **DUST SUPPRESSANTS:** Water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

L. **EARTH-MOVING ACTIVITIES:** Include, but are not limited to, grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, or soil mulching.

M. **EDCAQMD:** El Dorado County Air Quality Management District

N. **FUGITIVE DUST:** Any solid particulate matter that becomes airborne, without first passing through a stack or duct, directly or indirectly as a result of the activities of man (i.e. anthropogenic), including the raising and/or keeping of animals.

O. **GRAVEL PAD:** a layer of gravel, rock, or crushed rock which is at least one inch or larger in diameter and less than five (5) percent silt content, maintained at the point of intersection of a paved public roadway and a work site entrance to dislodge mud, dirt, and debris from tires of motor vehicles and haul trucks prior to leaving a worksite.

P. **GRIZZLY**: a device used to dislodge mud, dirt, and debris from the tires and undercarriage of motor vehicles and haul trucks prior to leaving the work site.

Q. **INACTIVE DISTURBED SURFACE AREA**: Any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of seven (7) consecutive days.

R. **LARGE OPERATIONS**: any active operations on property which contains 50 or more acres of disturbed surface area.

S. **NON-ROUTINE**: Any non-periodic active operation that occurs no more than three (3) times per year, lasts less than 30 cumulative days per year, and is scheduled less than 30 days in advance.

T. **OPEN STORAGE PILE**: Any accumulation of bulk material, which is not fully enclosed, covered, or chemically stabilized.

U. **OWNER/OPERATOR OR PERSON:** includes, but is not limited to:

1. An individual, trust, firm, joint stock company, business concern, partnership, limited liability company, association, or corporation including, but not limited to, a government corporation;

2. Any city, county, district, commission, the state or any department, agency, or political subdivision thereof, any interstate body, and the federal government or any department or agency thereof to the extent permitted by law; or

3. A project proponent and any of its contractors or subcontractors.

V. **PARTICULATE MATTER:** Any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.

W. **PAVED ROAD:** An improved street, highway, alley, public way, or easement that is covered by typical roadway materials. Public paved roads are those open to public access and that are under the jurisdiction of any federal, state, county, municipal or any other governmental or quasi-

governmental agencies, including gated communities and Zone of Benefit maintained roads. Private paved roads are any paved roads not defined as public.

X. **PAVING:** creating a cover consisting of portland cement, asphalt concrete, asphaltic concrete, recycled asphalt, or chip seal.

Y. **PM10:** Is particulate matter with an aerodynamic diameter smaller than or equal to a nominal 10 microns as measured by an applicable reference test method or methods found in Article 2, Subchapter 6, Title 17, California Code of Regulations (commencing with Section 94100).

Z. **PROJECT BOUNDARIES:** the right-of-way and any construction easements adjacent to and necessary for the purposes of a specific road construction project or maintenance activity.

AA. **PROPERTY:** any real property including, but not limited to, any contiguous parcel or parcels of land and anything attached to, or erected on it.

BB. **ROAD CONSTRUCTION AND MAINTENANCE:** Activities undertaken to build roads, highways, railroads, bridges, culverts, drains and other works incidental to road or highway construction and maintenance activities that involve grading or excavation.

CC. **ROAD SURFACE:** the traveled way of a road and any shoulder which may extend up ten (10) feet from the edge of the traveled way.

DD. **SIMULTANEOUS SAMPLING:** The operation of two PM10 samplers in such a manner that one sampler is started within five (5) minutes of the other, and each sampler is operated for a consecutive period which must be not less than 290 minutes and not more than 310 minutes.

EE. **STABILIZED SURFACE:** any previously disturbed surface area or open storage pile which shows visual or other evidence of resistance to wind generated fugitive dust. This can be accomplished through the application of dust suppressants, tillage, vegetative or mechanical ground cover, or other mechanisms to create a stable surface. Efficiency of surface stabilization can be measured pursuant to the Surface Crusting Test as applicable for construction operations.

FF. **TRACK-OUT/CARRY-OUT:** Any and all bulk materials that adhere to and agglomerate on the exterior surfaces of motor vehicles and/or equipment (including tires) that have been released onto a paved road.

GG. **UNPAVED ROADS:** Any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by one of the following: concrete, asphaltic concrete, recycled asphalt or asphalt. Public unpaved roads are any unpaved roadway under the jurisdiction of any federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.

HH. **VISIBLE EMISSIONS:** Any particulate matter that is visually detectable without the aid of instruments other than corrective lenses.

II. **VISIBLE ROADWAY DUST:** Any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and can be removed by a vacuum sweeper or a wet sweeper under normal operating conditions.

JJ. **WIND-GENERATED DUST:** Visible emissions from any disturbed surface area that is generated by wind action alone.

223.4 REQUIREMENTS

A. **VISIBLE EMISSIONS NOT ALLOWED BEYOND BOUNDARY LINE**: A person shall not cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area, such that the presence of such fugitive dust remains visible, or exceed shade darker as that designated as No. 0 on the Ringelmann Chart, or exceed 0% opacity as determined in accordance with US EPA Method 9, in the atmosphere beyond the boundary line of the emission source.

B. **CONCENTRATION LIMIT**: A person shall not cause or allow PM10 levels to exceed 50 micrograms per cubic meter, 24 hour average, when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA approved equivalent methods for PM10 monitoring. Sampling, if deemed necessary and required by the Air Pollution Control Officer, shall be conducted in accordance with the procedures specified in Section 223.5.A.

223.5 MONITORING AND RECORDKEEPING

A. **MONITORING:**

1. Sampling to determine compliance with the particulate matter concentration limit of Section 223.4.B is only required when deemed necessary by the Air Pollution Control Officer.

2. The conduct of sampling to demonstrate compliance with Section 223.4.B may be required, with reasonable notice, of the person discharging emissions, or sampling may be conducted by the EDCAQMD with the costs of sampling, not to exceed actual costs, borne by the person discharging emissions.

3. Samplers shall be operated, maintained, and calibrated in accordance with 40 CFR Part 50, Appendix J, or appropriate U.S. EPA published documents for U.S. EPA approved equivalent method(s) for PM10.

4. Samplers shall be placed upwind and downwind of key activity areas and as close to the boundary line as feasible, such that other sources of fugitive dust between the sampler and the boundary line are minimized.

5. Procedures for the conduct of simultaneous sampling to determine compliance with Section 223.4.B, and the reporting of results, shall be approved by the Air Pollution Control Officer.

B. RECORDKEEPING:

1. A person or owner/operator shall maintain records and any other supporting documents to demonstrate compliance with the requirements of EDCAQMD Rules 223 only for those days that a control measure was implemented.

2. Such records shall include the type of fugitive dust control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant,

manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions.

3. Records shall be retained for two years following project completion that results in the termination of all dust generating activities. Records shall be made available to the Air Pollution Control Officer upon request.

Appendix N

Health and Safety Plan

Oak Ridge High School
Naturally Occurring Asbestos (NOA)
Operations and Maintenance (O&M) Plan

Overview

This document is provided as a basis of worker health and safety for maintenance workers of the El Dorado Union High School District for work activities that may impact naturally occurring asbestos (NOA) at Oak Ridge High School (ORHS). Native soils at the site have been previously sampled and asbestos has been identified at the school site. Remediation work during 2003 by the School District and in 2004 by the U.S. EPA have resulted in the key areas of native soils covered over with clean soil, asphalt, asphalt concrete, concrete shotcrete, bark and vegetation, or top soil/lava rock for the baseball infields. Below these enclosed areas of soil, bark, and vegetation, there is geotextile fabric that is present as an indicator of the native soils beneath it. As a result of these mitigation efforts in 2003 and 2004, the potential for exposure to NOA containing campus soil has been minimized.

The purpose of this Health and Safety Plan is to address health and safety requirements for those activities that will result in disturbing any native soils that are currently covered.

Activities Identified Which May Disturb NOA

Custodians

The primary functions of custodial staff at the campus involves sweeping, clean-up of walking surfaces from inclement weather, cleaning interior of buildings and cleaning exterior of buildings.

The potential impact to NOA by the Custodial Staff at the school site is considered minimal. Since the school site has been mitigated, there are no exposed areas of NOA that would result in “tracking” NOA material into the buildings on the shoes of students and staff. Extensive air sampling inside of classrooms conducted during 2003 and 2004 did not identify significant levels of asbestos inside of the classrooms during aggressive sampling conditions. Future cleaning of the interior of the classrooms by dusting, vacuuming, and sweeping by the custodial staff using existing methods is not anticipated at causing elevated exposures to asbestos.

Maintenance Staff and Athletic Maintenance and Grounds

The maintenance staff at the school site are the primary workers who might impact NOA at the school site through planned projects and unplanned emergency projects. The primary duties identified for maintenance staff that may impact NOA include, but are not limited to:

Sprinkler Repair
Dragging Baseball and Softball Infields
Planting Trees and Shrubs
Cleaning Sidewalks
Mowing Lawns
Over-seeding and Top-dressing Lawns
Weed Eating
Fence Repair
Shredded Bark Replacement
Tool and Equipment Cleaning and Repair

Responsibilities of Key Personnel

The NOA Plan Coordinator (Director of Maintenance and Operations) will be in charge of all operations at the school and oversee enforcement of the health and safety of all employees who may impact NOA. The onsite Maintenance Staff Supervisor is responsible for day to day enforcement of the health and safety provisions of all work activities on the school site.

Hazard Evaluation

1. Airborne dust levels have been identified as the primary means of potential exposure to asbestos during disturbance of NOA. Reduction of airborne dust levels by water suppression methods is the method of choice for minimizing airborne dust. Hand watering using hoses attached to existing water faucet hose bibs, or by Hudson type sprayers will be used to wet those areas where NOA will actively be disturbed. Visible dust emissions of suspect or known areas of NOA is not allowed during any phase of work activity. It is not anticipated visible dust emissions will be a major factor when the water suppression measures are employed.

2. Mechanical safety hazards and other hazards associated with the various work activities the maintenance staff may potentially face with regards to the operation of personal vehicles, trucks, and other heavy equipment shall be addressed by the maintenance staff and shall be covered by their own Injury and Illness Prevention Program (IIPP). These items will not be addressed in this document.

Personal Protection Requirements

The following requirements apply for personal protection of maintenance staff when NOA will be disturbed:

1. Based on the very limited amount of disturbance of suspect or known NOA and the strict requirement for water suppression and no visible dust emissions, respirators will not be required for any of the small scale activities anticipated on the campus during earth disturbance by the maintenance staff. Based on previous personal and area air monitoring by HMS, Inc. at ORHS during construction
2. excavation activities in 2003, no significant levels of airborne asbestos are expected.

   The primary basis for not requiring respirators will be no visible dust emissions when disturbing suspect areas of NOA or known areas of NOA. No work shall be allowed to proceed if there are visible dust emissions generated and all work shall stop until sufficient wetting of the soils is achieved. The exposed NOA soils shall be adequately wetted to assist in no visible emissions, but care should be made so as not to add too much water to make the work difficult.

2. The workers shall wear high leather work boots or rubber boots depending upon the work activity and wetness (muddy conditions). Leather gloves and rubber gloves shall be made available for use by the workers and will be used as the conditions dictate. In most cases, gloves may not be necessary. Good personal hygiene is necessary for all maintenance staff who will be disturbing NOA.

3. Washable and reusable coveralls will be made available for the maintenance staff to wear over their street clothes for employees who would like to wear them, and will be required on specific projects that will result in getting mud on their street clothes. The school district is responsible for cleaning and drying the coveralls onsite.

Decontamination Procedures

Clean potable water shall be available in the immediate work area to provide washing of lower arms and hands of workers at the end of each work period and will be self-enforced.

Vehicular decontamination procedures shall include washing the tires at the site to prevent tracking out onto paved and non-paved access roads and paths to the different work areas. Since any work activity conducted by the maintenance staff

will include collection and stockpiling NOA soils onto either plastic or sheets of plywood, the likelihood of significant track-out potential is very low.

Tailgate Meetings

The NOA Plan Coordinator and onsite Maintenance Supervisor shall hold an initial "tailgate" meeting to discuss the specific requirements of this Health and Safety Plan, dust mitigation measures, required personal protective equipment, and personal hygiene requirements for every project where NOA will be impacted.

A worker sign-in sheet will be used to document participation in all tailgate meetings and the topics discussed.

Protection from the Public

The uninvited public, students, and staff will not be allowed in the immediate work areas on site and will be asked to leave by the school district maintenance personnel conducting the work. The work area shall be delineated using construction "cones," construction ribbon, and/or fencing to keep people out of the immediate work area.

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