

# EXPLANATION OF SIGNIFICANT DIFFERENCE

## Recommended Changes

To The Record of Decision

For

Northstar Development, Marion County, Oregon (ECSI No. 6036)

May 24, 2018



### 1. Introduction and Purpose

This Explanation of Significant Difference (ESD) report provides a description of the changes to the remedial action for soil contamination at the Northstar Development site located at 4985 Kale St. NE, Salem, Oregon on Marion County Map 062W32C, Tax Lots 200, 701, 600, 900, and 1000 (Figures 1 and 2). The remedial action for this site was selected and described in a Record of Decision (ROD) dated November 1, 2017 after a public comment period. The proposed changes meet the cleanup standards specified in Oregon Revised Statute (ORS) 465.315 and Oregon Administrative Rule (OAR) 340-122-040.

The site is being re-developed from farmland to a residential community. The 2017 ROD specified that soil with dieldrin contamination above the residential soil risk based concentration (RBC) of 0.034 milligrams per kilogram (mg/kg) be removed prior to residential development. The developer has requested that the cleanup goal for the multi-family use area that will be located on the western end of tax lot 600 (Figure 2) be changed to the urban residential soil RBC, which is 0.085 mg/kg. They also propose moving some soil from the single-family development to the multi-family area for structural fill. These changes would reduce the amount of soil that would need to be taken offsite for reuse or disposal, while still meeting DEQ's risk based standards

This ESD summarizes the more detailed information presented in the April 30, 2018, *Request for Explanation of Significant Difference to FS/ROD*, which is part of the Administrative Record for the Northstar Site, ECSI #6036.

### 2. Summary of Site History, Contamination, and Selected Remedial Action

The site consists of approximately 149 acres of agriculture land that has been farmed since the 1890's. Various crops were grown over the years including row crops, grass, and grains. Strawberries were cultivated on the central northeastern area of the property between the 1950's and 1960's. The strawberry crops were treated with the pesticide aldrin that breaks down into dieldrin. Aldrin and dieldrin are considered persistent pesticides and were banned from agriculture use by EPA in 1974. The City of Salem annexed the site in 2002 and the site was rezoned for residential development. Most of the property is planned for single-family construction except for the western boundary, which is zoned for high density, multi-family use and will be developed into apartments. This area includes all of cells 1, 22, and 23 and a small part of cells 2, 21, and 24 on tax lot 600 (Figure 3).

The property owner's consultant, Anderson Geological (AGI), completed environmental investigations on the site between August 2015 and March 2016. Dieldrin was found in shallow soils across most of the site from the surface to up to 30 inches below ground surface (bgs). AGI estimated that approximately 152,000 cubic yards of soil at the site contained dieldrin levels above DEQ's generic RBC of 0.034

mg/kg for residential ingestion, inhalation, and dermal contact. No other pesticides were found above the residential RBC.

AGI completed a feasibility study (FS) and a FS amendment in August 2016 and June 2017, respectively. The remedial action objective was to prevent exposure of future residents to soil containing dieldrin above the residential ingestion, inhalation, and dermal contact risk levels. Five soil cleanup alternatives were reviewed including 1) No Action, 2) Excavation with Onsite Disposal/Containment, 3) Excavation with Offsite Disposal at Landfill, 4) Onsite Treatment, and 5) Excavation with Offsite Reuse (with a Solid Waste Permit Exemption). Alternative 5 was chosen as the selected remedy because it had the lowest cost and was highly effective, reliable, easy to implement and had a low implementation threat. After completion of a public notice and comment period, and a public meeting, DEQ issued a Record of Decision (ROD) selecting alternative 5 as the final remedy for the site. The selected remedy in the ROD includes:

- Excavation and removal of soil exceeding a residential cleanup goal for dieldrin of 0.034 mg/kg.
- Transport, placement and reuse of the dieldrin contaminated soil in two abandoned quarries (northern quarry and southern quarry) on an agriculture land located at 6848 Windsor Island Road, Keizer, Oregon on Marion County Map and Tax Lot 063W28 00300. Reuse of the soil at this location was approved under a DEQ Solid Waste Permit Exemption.
- Obtaining appropriate floodplain and wetland permits before infilling the southern quarry.
- Recording a deed notice on the Windsor Island farm property to document the location and restrict residential use in the soil reuse area.
- Implementing an approved dust control and monitoring plan during all cleanup, transport and infilling activities.
- Providing a spill prevention, response and safety plan before transporting any contaminated soil offsite.

### **3. Basis for the Significant Change**

The developer completed soil removal and cleanup activities on the eastern half of the property in September 2017. The developer had to remove approximately 66% more soil (37,000 cubic yards) than originally estimated (27,500 cubic yards) from this part of the site in order to meet the residential cleanup goal of 0.034 mg/kg. Due to the limited space in the two abandoned quarries where the soil is to be deposited, the developer requested the following changes to the remedial action:

- Change the soil cleanup goal from the residential RBC of 0.034 mg/kg to the urban residential RBC of 0.085 mg/kg on the west end of the property. This portion of the property is zoned for high-density multi-family use and will be developed into apartments.
- Use soil from parts of the property planned for single-family homes that is above the residential standard of 0.034 mg/kg, but below the urban residential cleanup goal of 0.085 mg/kg as structural fill in the area being developed for apartments.

Table 1 below compares the original remedy to the modified remedy. Exercising this change would 1) save \$260,000 to \$350,000 in transport and disposal costs and 2) reduce the amount dieldrin

contaminated soil that would need to be transported on public roads and through residential areas by about 2000 truckloads.

**Table 1**  
**Comparison of Options for Disposal/Re-Use of Portion of Soils that Exceed Residential RBCs**

	<b>Original Remediation Plan</b>	<b>Proposed Modified Remediation Plan</b>
<b>Soil Disposal/Re-Use</b>	Place all dieldrin-contaminated soils in pits on Zielinski Farm, Keizer. Total estimated volume: 227,500 cy.	Re-use 30,000-40,000 cubic yards of soil that exceed Residential RBCs but does not exceed Urban Residential RBCs in multi-family area.  Place all remaining dieldrin-contaminated soil in pits on Zielinski Farm. Estimated volume: 197,500 – 187,500 cy.
<b>Estimated Project Cost</b>	\$2,730,000	\$2,380,000 – \$2,467,500
<b>Advantages</b>	-Beneficial use of soil as farmland -Disposal in urban area = less opportunity for human exposure	-More economical and efficient -Less material and fewer loads trucked through neighborhoods and congested areas. -Frees up space in disposal pits and containment cell for contaminated material.
<b>Disadvantages</b>	-Higher cost -More truck traffic through neighborhoods and congested areas.	Contaminated material remains on the Northstar site.

#### 4. Description of Significant Difference

Dieldrin levels in the soil over most of the area planned for multi-family development are below the urban residential RBC of 0.085 mg/kg. Only soil in cell 23C (Figure 2) contains dieldrin above these levels. The proposed change would allow all soil, except for shallow soil from cell 23C, to remain in the multi-family development area. Soil from cell 23C with dieldrin levels above 0.085 mg/kg would be excavated and transported to the Windsor Island farm reuse site. The original remedy required the removal of all soil at the site with dieldrin concentrations above the residential RBC of 0.034 mg/kg and did not consider the urban residential RBC for the multi-family use area.

This change also allows moving of about 30,000 to 40,000 cubic yards of soil from parts of cells 2, 21, 24, 37 and 38 in the single-family area that contain dieldrin below the urban residential RBC to the future apartment area for reuse as structural fill. This soil would help to raise the elevation of this area by 2-3 feet and reduce the need to import fill to the site. The area is approximately 15.5 acres and measures 500 x 1350 feet and will be covered with buildings, garages, pavement, or landscaping maintained by the owner. No bare or exposed soil will remain in the multi-family use area upon completion of the development. This change will reduce the amount of soil needing to be transported and reused at the

Windsor Island farm by about 30,000 to 40,000 cubic yards, which could save up to 2,000 truck trips.

## 5. Evaluation of Difference

AGI compared the effectiveness, reliability, implementation, implementation threat and cost between the original and modified remedy. Both scored high in effectiveness, and reliability. The implementation threat scored slightly lower on the original remedy because of the extra risk associated with the transport of the dieldrin-contaminated soil to the Windsor Island farm site. The modified remedy scored slightly higher on the cost due to the reduction in the number of truckloads resulting in lower transport costs.

**Table 2**  
Comparison of Selected Remedy and Modified Remedy

Remedial Option	Effectiveness	Long-Term Reliability	Implement-ability	Implement-ation Threat	Cost (Total \$/Cost per Cubic Yard)	Score	Comments
<u>Original Selected</u> Excavation and Re-Use at Local Farms	High (5)	High (5)	High (5)	Low to Moderate (4)	Low (\$2,700,000) (4)	23	Alternative involves placing all contaminated soil (up to 227,000 cy) in approved location where it will be reused on farm land.
<u>Modified Remedy</u> Same as Original, plus Re-Use of soils On Site in Multi-Unit Residential Area	High (5)	High (5)	High (5)	Low (5)	Low (\$2,400,000 to \$2,500,000) (4.5)	24.5	Alternative involves placing 187,000-197,000 cy of contaminated soil in approved location where it will be reused on farm land <b>and</b> relocation of up to 40,000 cy of soils contaminated below Urban Residential RBC to multi-family residential area.

Each factor is assigned a score from 0-5, with "0" being least desirable and "5" being most desirable.

## 7. Conclusion

The evaluation above shows that the selected remedy, with the modifications described herein, remains protective and is highly effective, reliable, easy to implement, has a low implementation threat and slightly reduces the cost of the original remedy. The remedy with the modification meets the intent of the remedial action objectives by removing contaminated soil in the single-family area that is above the residential RBC of 0.034 mg/kg and allowing soils to remain or be relocated into the multi-family area that are below the urban residential RBC of 0.085 mg/kg. These changes will significantly reduce the amount of truck trips to the soil reuse site, reducing the carbon footprint of the remedial action, as well as

reduce wear and tear on roads.

## 8. Public Notice

A formal public comment period is not required for an ESD. A description of the ESD request was included in a Fact Sheet that was distributed to the neighbors and interested parties on May 16, 2018. Once the ESD is signed, a public notice will be posted in the local newspapers summarizing the ESD and the location of additional information. The ESD request and signed ESD will be filed with the administrative record for the site and posted on the website for the project.

## 9. Explanation of Significant Difference.

The requested modification meets the intent of the remedial action objectives by removing contaminated soil above levels that are appropriate for future residents. The original selected remedy required the removal of all soil at the site with dieldrin concentrations above the residential soil RBC of 0.034 mg/kg and did not take into consideration the multi-family use area on the western end of the site. The residential RBC applies to single-family homes with yards and gardens that could have increased and longer-term exposure to the contaminated soil. The urban residential RBC of 0.085 mg/kg is more appropriate for multi-family uses such as apartments. Using a cleanup goal of 0.085 mg/kg in the multi-family use area remains protective and meets the intent of the remedial action objectives. It also reduces the amount of soil needing to leave the site and slightly reduces the cleanup costs.

Signature



Donald E. Hanson, RG

Acting Manager

Western Region Environmental Cleanup and  
Emergency Response Program

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