STATE LAND BOARD

August 10, 2021
10:00 am – 12:00 pm
Zoom Video/Audio Meeting
The meeting video will be livestreamed on the
Department of State Lands YouTube Channel

AGENDA

Consent Items

1. Request for approval of the minutes of the June 8, 2021, State Land Board Meeting

Action Items

2. Request for approval of a direct sale of 2.71 acres of subsurface minerals and geothermal rights located in Salem, Marion County

3. Request for approval of a direct sale of 15.0 acres of subsurface minerals and geothermal rights located in Salem, Marion County

Informational Items

4. Other
Meeting video will be livestreamed at:
https://www.youtube.com/channel/UCQA7FHTWwl-gjJkQeYPJ11A

*If you need assistance to participate in this meeting due to a disability, please notify Arin Smith at (503) 986-5224 or arin.n.smith@state.or.us at least two working days prior to the meeting.*

**Public Testimony** - The State Land Board places great value on information received from the public. The Board typically accepts comments on *consent and action agenda items only.*

**Providing Public Testimony During Video Meetings** – When the Board meets by video, the public may provide written or spoken testimony, time permitting and at the discretion of the Chair.

- **Providing Written Testimony:** Written testimony may be submitted at [landboard.testimony@state.or.us](mailto:landboard.testimony@state.or.us). Testimony received by 10 a.m. the day before the meeting is provided to Land Board members in advance and posted on the meeting website. Testimony received after this deadline may not be provided to the Land Board prior to a vote. Please indicate the agenda item your testimony relates to.

- **Providing Spoken Testimony:** The signup deadline to provide spoken testimony at virtual meetings is 10 a.m. the day before the meeting. Signup information is posted on the [Land Board Meetings website](http://landboard.state.or.us). After signing up, you will receive a confirmation email containing additional information.

When signing up to provide testimony for a video meeting, please:
- Include your name, organizational affiliation (if any).
- Indicate which consent or action agenda item your testimony relates to. *Please note: Testimony on action items is taken during the item’s presentation, before the Land Board votes. Please review the meeting agenda and be present and prepared to provide testimony at the appropriate time.*
- Be aware that there may not be time for everyone who signs up to provide testimony.

Please note: The standard time limit is three minutes for each individual; the actual time available for testimony during Land Board meetings is at the discretion of the Chair. The Board cannot accept testimony on topic for which a formal public hearing has been held or a formal comment period has closed, such as rulemaking or permitting public review and comment periods.
The State Land Board (Land Board or Board) met in regular session by teleconference on June 8, 2021. The meeting audio and video was livestreamed on the DSL YouTube channel.

Present were:
Kate Brown  Governor
Shemia Fagan  Secretary of State
Tobias Read  State Treasurer

Land Board Assistants
Jason Miner  Governor’s Office
Molly Woon  Secretary of State’s Office
Ryan Mann  State Treasurer’s Office

Department Staff
Vicki Walker  Bill Ryan  Lani Ahmadian  Ali Ryan Hansen
Arin Smith  Jean Straight  Liane O’Neil  Ted Bright

Department of Justice
Matt DeVore

Governor Brown called the meeting to order at 10:00 a.m. The topics discussed and the results of those discussions are listed below. To view the Land Board (Board) meeting in its entirety, please visit our YouTube page: https://www.youtube.com/watch?v=Tj7MikcpRFw&t=9s

Governor Brown opened the meeting with a brief statement regarding the Covid vaccine, thanking those who have been vaccinated and encouraging those who have not, to do so.

Consent Items

1. Minutes

Treasurer Read made a motion to approve the minutes for the February 9, 2021, Land Board meeting. Secretary Fagan seconded the motion.

The consent item was approved at 10:03 a.m.
Action Items

2. Request for final approval to sell the surface property rights of the North Tongue Point property in Astoria.

Treasurer Read made a motion to approve the action item.
Secretary Fagan seconded the motion.

The consent item was approved at 10:08 a.m.

3. Request for approval for a permanent easement to build, operate, and maintain a replacement bridge crossing the Willamette River in Corvallis.

Secretary Fagan made a motion to approve the action item.
Treasurer Read seconded the motion.

The consent item was approved at 10:11 a.m.

4. Request for final approval to complete the exchange of 140 acres of the South Redmond Tract in Deschutes County.

Comments in support of the exchange were taken from Deschutes County Commissioner Phil Chang.

Treasurer Read made a motion to approve the action item.
Secretary Fagan seconded the motion.

The consent item was approved at 10:21 a.m.

5. Request for final approval to exchange surface rights on approximately 164 acres of DSL-owned rangelands in Harney County.

Secretary Fagan made a motion to approve the action item.
Treasurer Read seconded the motion.

The consent item was approved at 10:25 a.m.

Informational

6. Update regarding Territorial Sea Plan Rocky Shores designations

Director Walker gave an update on the Territorial Sea Plan's Rocky Habitat Management Strategy.

Deputy Director Bill Ryan answered a follow-up question from Treasurer Read.
7. Other

- Brief overview of the legislative session.
- Brief update on the Elliott State Research Forest.

Comments were taken from Treasurer Read and Secretary Fagan.

Deschutes County Commissioner Anthony DeBone briefly joined the meeting to give comments in support of agenda item 4.

The meeting was adjourned at 10:46 a.m.

_____________________________________
Kate Brown, Governor

_____________________________________
Vicki L. Walker, Director
SUBJECT

Request for approval of a direct sale of 2.71 acres of subsurface minerals and geothermal rights located in Salem, Marion County, Township 8 South, Range 3 West, Section 12B, a portion of Tax Lot 1600, LAS File #63379.

ISSUE

Whether the State Land Board should authorize the direct sale of 2.71 acres of subsurface minerals and geothermal rights in Marion County owned by the Oregon Youth Authority to Westwood Homes, LLC.

AUTHORITY

- Oregon Constitution, Article VIII, Sections 2 and 5; pertaining to the Common School Fund and land management responsibilities of the State Land Board.
- ORS 273.055; relating to the power to acquire and dispose of real property.
- ORS 273.171; relating to the duties and authority of the Director.
- OAR 141-073; relating to procedures for the sale, exchange, or release and transfer of mineral and geothermal resources owned by other state agencies.
- Real Estate Asset Management Plan (REAMP), adopted by the Land Board, February 2012.
SUMMARY

On June 10, 2021, the Oregon Youth Authority (OYA) requested the sale of approximately 2.71 acres of subsurface mineral and geothermal rights (see map in Appendix A). The surface rights have been sold and the site is in the process of being developed with single-family homes. Because the City of Salem requires the street right-of-way dedication not be encumbered by lack of mineral rights, the property cannot be developed unless the state sells the mineral rights to the surface owner.

OYA supports the direct release of the mineral rights and has requested that DSL process the minerals release request under OAR 141-073. DSL processes most mineral sales owned by other state agencies under these rules.

A Department of Geology and Mineral Industries mineral potential report (Appendix B) was conducted on December 30, 2020, on a Department of Administrative Services-owned property at 2450 Strong Road SE. Because the OYA property falls within the ten-mile radius, the property is also covered under the report. The report concluded the potential for significant value subsurface minerals in this area is low. Even if high-value minerals were found in this location, the property is within city limits and zoning ordinances prohibit surface mining. It is highly unlikely minerals could ever be extracted in this location.

Public notice was sent out to adjacent property owners, local governmental agencies and local tribes. DSL received a comment from an individual from Grants Pass who stated they thought if the property has strategic minerals that the federal government should be allowed to purchase the minerals. A call was also received from an adjacent property owner who wanted to clarify the reason for the mineral sale. Once reassured that no mining would occur, he was satisfied.

ORS 273.780 (3) states, “Except as provided in ORS 273.787, the mineral and geothermal resource rights shall be retained by the state in the absence of a finding by the State Land Board upon adequate facts presented to it that their sale or exchange is for the purpose of obtaining the greatest benefit for the people of this state, consistent with the conservation of lands under its jurisdiction under sound techniques of land management.”

The sale of the mineral rights for this property will provide the greatest benefit for the people of this state by enabling this property to be developed with much-needed housing. This site will provide home sites for up to eighteen homes.

Department policy is to sell subsurface minerals and geothermal rights for a land transaction fee for a minimum fee of $250. The sale price for this transaction is $250.
RECOMMENDATION

The Department recommends the State Land Board approve the direct sale of the subsurface minerals and geothermal rights located in Marion County at Township 8 South, Range 3 West, Section 12B, a portion of Tax Lot 1600, to Westwood Homes LLC.

APPENDICES

A. Site Map
B. Mineral Report
EXHIBIT A

Westwood Homes Minerals Sale (App#63379)
T8S R3W Section 12B, Portion of Tax Lot 1600
2.71-acres
Marion County

DAS Hillcrest Property
Oregon Youth Authority Minerals

This map depicts the approximate location and extent of a Department of State Lands Proprietary authorization for use. This product is for informational purposes only and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.
MINERAL RESOURCE ASSESSMENT REPORT

HILLCREST PROPERTY
MARION COUNTY, OREGON

by Carlie J.M. Duda¹ and Jason D. McLaughry²

for

Oregon Department of State Lands

2020

¹Oregon Department of Geology and Mineral Industries, 800 NE Oregon Street, Suite 965 Portland, Oregon 97232
²Oregon Department of Geology and Mineral Industries, Baker City Field Office, 1995 3rd Street, Suite 130, Baker City, OR 97814
DISCLAIMER

The Oregon Department of Geology and Mineral Industries is not liable for any claimed damage from the use of this information.

This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information. This publication cannot substitute for site-specific investigations by qualified practitioners. Site-specific data may give results that differ from the results shown in the publication.

Expires: 12/1/2021

Oregon Department of Geology and Mineral Industries Mineral Resource Assessment Report
Published in conformance with ORS 516.030

For additional information:
Administrative Offices
800 NE Oregon Street, Suite 965
Portland, OR 97232
Telephone (971) 673-1555
Fax (971) 673-1562
http://www.oregongeology.org
http://oregon.gov/DOGAMI/
TABLE OF CONTENTS

1.0 Introduction ....................................................................................................................................... 5
  1.1 Instructions......................................................................................................................................... 5
  1.2 Layout of Report................................................................................................................................. 5

2.0 Physical setting ................................................................................................................................... 6

3.0 Results................................................................................................................................................ 9
  3.1 Status of Mineral Surveys ................................................................................................................... 9
  3.2 Mining Claims/Leases ......................................................................................................................... 10
  3.3 Mineral Setting.................................................................................................................................. 10
  3.4 Known Mineral Occurrences ............................................................................................................ 11
  3.5 Mineral Resource Interpolation ....................................................................................................... 15

4.0 Literature Sources ............................................................................................................................... 18

5.0 Methods and Limitations.................................................................................................................. 18
  5.1 Levels of Resource Potential (modified from Goudarzi, 1984) ....................................................... 19
  5.2 Levels of Certainty of Assessment (Goudarzi, 1984) ...................................................................... 19

LIST OF FIGURES

Figure 2-1. Vicinity map for Hillcrest Property ........................................................................................ 7
Figure 2-2. Map of land ownership in the study area ............................................................................. 8
Figure 3-1. Simplified geologic map of the study area .......................................................................... 12
Figure 3-2. Mineral occurrences in the study area ................................................................................ 14

LIST OF TABLES

Table 2-1. Hillcrest Property physical setting ...................................................................................... 6
Table 3-1. Minerals occurrences within the study area .......................................................................... 11
Table 3-2. Mineral resource potential in Hillcrest Property ..................................................................... 15
Table 5-1. Levels of resource potential modified from Goudarzi (1984). ............................................. 19
Table 5-2. Levels of certainty assessment modified from Goudarzi (1984). ........................................... 19
SUMMARY

This document describes a desktop mineral resource assessment of state-owned Tax Lot, 01499 in T. 8 S., R. 3 W., Secs. 11 and 12, Marion County, Oregon (herein called Hillcrest Property). The Oregon Department of Geology and Mineral Industries (DOGAMI) conducted this study at the request of the Oregon Department of State Lands (DSL).

The DSL contacted DOGAMI on July 7, 2020 requesting a mineral resource assessment report for Hillcrest Property. The cost estimate, signed by both DSL and DOGAMI, was finalized on December 11, 2020, which authorized the work to proceed. A desktop mineral resource assessment was completed on December 30, 2020. The format of this report and its contents follows the requirements of the DSL-DOGAMI Interagency Agreement (DSL #19-180) for the 2019-2023 biennia.

This review is a low-level, qualitative assessment, designed to provide DSL with general information about the mineral resource potential of Hillcrest Property. A detailed assessment and valuation of potential mineral resources, based on site visits and sampling, was beyond the scope for this work. The occurrence of minerals within the “study area”, an approximately 10 miles (16 km) radius area that borders Hillcrest Property, is summarized below:

<table>
<thead>
<tr>
<th>Type of Commodity</th>
<th>Study Area (Mineral Occurrences)</th>
<th>Hillcrest Property (Mineral Occurrences)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate (sand and gravel; stone, crushed and block; basalt)</td>
<td>126</td>
<td>0</td>
</tr>
<tr>
<td>Industrial mineral (clay)</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Metals/minerals (bauxite, iron, and titanium; copper)</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Coal</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Uranium and thorium</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Geothermal features (abandoned)</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Oil and gas wells (abandoned)</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>

APPENDIX B
Hillcrest Property’s mineral resource potential is summarized below:

<table>
<thead>
<tr>
<th>Type of Commodity</th>
<th>Resource Potential*</th>
<th>Level of Certainty**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand and gravel (borrow/fill/topsoil)</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Construction material (crushed/block stone- basalt)</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Limestone</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Clay</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Pumice</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Silica sandstone</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Bentonite</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Metals (precious, base metals)</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Coal</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Uranium and thorium</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Geothermal</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Oil and gas</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Other industrial minerals (gemstone materials, perlite, zeolite, manganese, titanium, zirconium)</td>
<td>low</td>
<td>B</td>
</tr>
</tbody>
</table>

*See Section 5.1 for description of levels of resource potential
**See Section 5.2 for descriptions of levels of certainty

Hillcrest Property has a low potential, level of certainty B (Goudarzi, 1984; see Sections 5.1 and 5.2 in the report; Table 5-1, Table 5-2) for the following non-fuel mineral commodities, including aggregate, industrial minerals (clay, silica sand, pumice, limestone, gem material, dimension stone, other clays (bentonite), perlite, zeolites, manganese, titanium, zirconium, etc.), and metals (precious, oxide, and base) and mineral fuels including coal, uranium/thorium, geothermal, oil, and gas.

1.0 INTRODUCTION

This report describes a desktop mineral resource assessment of the Hillcrest Property, Tax Lot 01499 in T. 8 S., R. 3 W., Secs. 11 and 12, Marion County, Oregon (Figure 2-1). The Hillcrest Property covers 44.6 acres.

1.1 Instructions

The DSL contacted DOGAMI on July 7, 2020 requesting a mineral resource assessment report for Hillcrest Property. The cost estimate, signed by both DSL and DOGAMI, was finalized on December 11, 2020, which authorized the work to proceed. A desktop mineral resource assessment was completed on December 30, 2020. The format of this report and its contents follows the requirements of the DSL-DOGAMI Interagency Agreement (DSL #19-180) for the 2019-2023 biennia.

1.2 Layout of Report

For the convenience of the reader, this report is divided into the following five sections:
- Section 1 is the introduction. It contains the project’s instructions and the layout of report.
- Section 2 is a description of the physical and geologic setting.
• Section 3 is a desktop assessment that describes the Hillcrest Property’s potential mineral resources.
• Section 4 is a list of references; some of which were consulted as a part of this review but may not be cited in the text body because they contain no information on the Hillcrest Property.
• Section 5 contains a brief description of the methods and limitations of the study, along with two reference tables: Levels of Resource Potential and Levels of Certainty. These tables provide a dual scheme that expresses the favorability of the subject area for a given resource and confidence from which the level of resource potential was assigned.

2.0 PHYSICAL SETTING

The Hillcrest Property is located along the east side of West Middle Fork Pringle Creek, in South Salem in Marion County, northwest Oregon (Figure 2-1). The Hillcrest Property covers an area of 44.6 acres. Table 2-1 describes the physical setting of the Hillcrest Property; Figure 2-1 shows its location and extent. The parcel’s elevation ranges from approximately 222 to 327 feet, descending from south to north. The highest point in the southern part of Hillcrest Property is elevated above the main part of Pringle Creek at a maximum elevation of 327 ft (Figure 2-1). None of the Hillcrest Property is within a FEMA 100-year Flood Zone (Figure 2-1). FEMA 100-year Flood Zone areas are constrained to the main channels and adjacent areas along the floor of the Willamette Valley (Figure 2-1). The “study area”, is an approximately 10 mile (16 km) radius area centered on the Hillcrest Property (Figure 2-2).

Table 2-1. Hillcrest Property physical setting.

<table>
<thead>
<tr>
<th>Size</th>
<th>44.6 acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topography</td>
<td>Flat</td>
</tr>
<tr>
<td>Shape</td>
<td>irregular</td>
</tr>
<tr>
<td>Zoning</td>
<td>Public &amp; semi-public Uses (from Oregon Explorer; <a href="https://spatialdata.oregonexplorer.info/geoportal/details?id=49bfb86d4e594a3c8fa8d968aaa45e9">https://spatialdata.oregonexplorer.info/geoportal/details?id=49bfb86d4e594a3c8fa8d968aaa45e9</a>)</td>
</tr>
</tbody>
</table>

This part of Marion County has a mild wet climate with warm dry summers and mild rainy winters. The January mean low temperature is approximately 35°F and the July mean high is 82°F. Precipitation is heavy and consistent during the late fall to early-summer wet season, with 90 percent the annual rainfall occurring between October and May and average annual precipitation of 40 inches. Snowfall is minimal except in areas of higher elevation above 800 feet (which includes the South Hills and Turner Hills. The surrounding County is a mixture of cultivated agricultural lands, open grasslands, oak groves, and forest lands.

The Hillcrest Property is accessible from Reed Road SE, via Interstate 5, Kuebler Boulevard, and Battle Creek Road. Land ownership within the study area is predominantly private, with areas of State, Federal, and County lands. State-owned and city-owned parcels are located along the Willamette River (Figure 2-2). The Hillcrest Property is completely surrounded by private land.
Figure 2-1. Vicinity map for Hillcrest Property (red shade). Basemap is scanned version of a 1:24,000 scale USGS topographic map; overlay is 1-m lidar hillshade. Source is NGS Esri Online. Blue shade is the FEMA high-risk flood zone (A).
Figure 2-2. Map of land ownership in the study area. The black circle, which defines the study area, is a 10-mile radius around the Hillcrest Property. The basemap is a 1-m lidar hillshade. Inset map is an oblique view of the Hillcrest Property looking north toward McNary Field. Imagery is from Google Earth™.
3.0 RESULTS

This section presents the results of the mineral resource scoping of the Hillcrest Property. While the focus of this assessment is the Hillcrest Property, the larger study area will be assessed to provide context for the site. A study area of this size provides a greater level of information about the identified occurrence of minerals and the Hillcrest Property’s mineral setting.

Where this report indicates a potential mineral resource might exist, it is important to understand what a “resource” is and means. According to the U.S. Bureau of Mines and U.S. Geological Survey (USGS) Circular 381, “Principles of a Resource/Reserve Classification System, (1980)”, “resource” means, “[a] concentration of naturally occurring solid, liquid, or gaseous material in or on the Earth’s crust in such form and amount that economic extraction of a commodity from the concentration is currently or potentially feasible” (p. 1). An identified resource is a “resource whose location, grade, quality, and quantity are known or estimated from specific geologic evidence” (p. 1).

A resource or identified resource does not infer or imply a “reserve base” or “reserve” exists. A “reserve base” is “that part of an identified resource that meets specific minimum physical and chemical criteria related to current mining and production practices, including those for grade, quality, thickness, and depth” (p. 2). The meaning of a “reserve” is “that part of the reserve base which could be economically extracted or produced at the time of determination” (p. 2).

The non-fuel mineral commodities evaluated for this assessment include aggregate, industrial minerals (clay, silica sand, pumice, and limestone), and metals (precious, oxide, and base). Mineral fuel commodities evaluated are coal, uranium/thorium, geothermal, oil, and gas. Occurrences of other commodities (gem material, dimension stone, other clays (bentonite), perlite, zeolites manganese, titanium, zirconium, etc.) will be reported as industrial minerals when encountered as part of this evaluation.

The term “aggregate” includes gravel and sand and all consolidated stone used for construction and roads. Stone may be further classified as crushed—rock that has been broken into smaller fragments—and blocks. Also, no distinction is made between a mineral occurrence and mineral deposit. The term “mineral occurrence” applies to both and is used to refer to a concentration of a mineral that could be considered valuable by someone somewhere or that is of scientific or technical interest.

3.1 Status of Mineral Surveys

- The locations of known mineral occurrences in the study area are summarized in the Mineral Information Layer for Oregon, release 3 (McClaughry and others, 2020), Niewendorp and others (2012), Wermiel (1987), and Olmstead (1989).
- Gray and Throop (1981) reported on the rock material resources of a four-county area, including Marion County. They provided information useful for short-range planning for rock material supplies used by county planning and public works departments, County and State road and highway departments, private contractors, and private citizens. Basic data for a number of mine sites within the study area was reported, including an occurrence of construction aggregate sited directly adjacent to the Hillcrest Property.
- Corcoran and Libbey (1956) reported on ferruginous bauxite deposits in the Salem Hills. Laterite sections of these deposits are scarce, because they rapidly deteriorate to form soil. Four site occurrences are within the study area; 2 sites of laterite are located ~3.5 to 4.5 miles south of the Hillcrest Property. Two sites of bauxite are also present in the study area; one site is located ~6
miles north of the Hillcrest Property in the Eola Hills, while another site is located ~4 miles east in the Waldo Hills.

- Peterson (1969) reported an occurrence of secondary mineralization of uranium in the study area that was not economically viable.
- Schafer (1956) reported the occurrence of secondary mineralization of uranium on Illahe Hill, ~4.5 miles west of the Hillcrest Property. The occurrence is hosted in tuffaceous marine sandstone of the Oligocene and upper Eocene Eugene Formation. Secondary minerals occur in small amounts over a wide area.
- Wermiel (1987) and Olmstead (1989) reported the locations of hydrocarbon exploration in Marion County. Eight oil and gas exploration wells (abandoned) are present, primarily in the southwest part of the study area, along the Willamette River.
- Wilson and Treasher (1938) reported on refractory clays of Western Oregon, including the Macleay Clay deposit, located ~5 miles east of the Hillcrest Property.

### 3.2 Mining Claims/Leases

DOGAMI does not maintain records pertaining to public claims or private mineral leases. Land ownership within the study area is mostly private, with less amounts of State-owned and Federal lands (Figure 2-2). The BLM does make some records of mining claims on Federal lands easily available to the public on its LR2000 website (www.blm.gov/lr2000/index.htm) (LR2000, 2013). Only certain types of mineral discoveries can be claimed; these minerals are broadly known as “locatable” (possessing a distinct and special value) and include such things as precious metals, gems, high-value industrial minerals, uranium, etc. Locatable minerals generally do not include construction aggregate, common industrial minerals, oil, gas, coal, or geothermal resources.

No mining claims were located either on the Hillcrest Property, or in the study area. There are 2 closed placer claims in Polk County (outside the study area), and an additional 1,140 mining claims in Marion County (outside the study area).

### 3.3 Mineral Setting

Brownfield and Schlicker (1981), McLaughry and others (2010), O’Connor and others (2001), Tolan and Beeson (1999), Tolan and others (2000), and Yeats and others (1996) provided the most current and detailed geological mapping in the study area. Later Franczyk and others (2020) compiled that work into a statewide digital compilation and database. This compilation is used to illustrate the geology of the study area in Figure 3-1.

The geology of the study area consists of the upper Eocene Spencer, upper Eocene and Oligocene Eugene, upper Eocene and Oligocene Keasey, and Oligocene and lower Miocene Scotts Mills formations (Figure 3-1). Upper Eocene diabase and Oligocene intrusive rocks locally intrude the section. The Eocene-Oligocene stratigraphic section is unconformably overlain by the early to middle Miocene Columbia River Basalt Group (CRBG). Rocks are variably offset by a number of northeast- to southwest-striking normal faults, including the Turner fault, that are intersected by northwest-southeast-striking normal faults (Yeats and others, 1996; Tolan and others, 2000; Figure 3-1). Extensive areas of Quaternary alluvial and deposits fill the broad Mill Creek and Willamette River valleys (Figure 3-1).

The Hillcrest Property is underlain by the early Miocene Grande Ronde Basalt of the CRBG between the Mill Creek and Willamette River valleys (Figure 3-1). Tolan and others (2000) showed several
orientation measurements from the Grande Ronde Basalt, indicating a low-angle, northeast dipping unit. The Grande Ronde Basalt at the Hillcrest Property is mantled by high terrace gravels of the Willamette Group and Missoula Flood sands and gravels.

### 3.4 Known Mineral Occurrences

In this report, no distinction is made between a mineral occurrence and mineral deposit. The term “mineral occurrence” applies to both and is used to refer to a concentration of a mineral that could be considered valuable by someone somewhere or that is of scientific or technical interest. The known mineral occurrences, geothermal features, and oil and gas exploratory wells in the study area, are tabulated below in Table 3-2 and shown in Figure 3-2. There are 3 occurrences of aggregate (sand and gravel) within 1 mile of the Hillcrest Property. One occurrence of clay is located ~2.5 miles south of the Hillcrest Property, and 1 geothermal occurrence is located ~2.5 miles northeast of Hillcrest Property (Figure 3-2).

**Table 3-1. Minerals occurrences within the study area.**

<table>
<thead>
<tr>
<th>Type of Commodity</th>
<th>Study Area (Mineral Occurrences*)</th>
<th>Hillcrest Property (Mineral Occurrences)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate (sand and gravel; stone, crushed and block; basalt)</td>
<td>126</td>
<td>0</td>
</tr>
<tr>
<td>Industrial mineral (clay)</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Metals/minerals (bauxite, iron, and titanium; copper)</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Coal</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Uranium and thorium</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Geothermal features (abandoned)</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Oil and gas wells (abandoned)</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>

*Mineral occurrence information queried from three spatial databases (see Section 4).
Figure 3-1. Simplified geologic map of the study area. The map base is a 1-m lidar DEM hillshade; the geology is modified from OGDC7, Franczyk and others (2020).

### 3.4.1 Study Area

- There are 126 aggregate sites in the study area (some points on Figure 3-2 overlap), 84 of which are sand and gravel or fill deposits; Three of these sites are located within 1 mile from the Hillcrest Property. The other 42 sites produced crushed stone, block, or both (McCloughry and others, 2020).
These low-unit-value, high-bulk commodities serve local markets. Specific site conditions or restrictions associated with each site are unknown.

- There are 4 occurrences of industrial minerals, all of which are clay (McClaughry and others, 2020; Figure 3-2).
- There are 9 occurrences of metals. Six of these occurrences are bauxite, iron, titanium, 2 occurrences are identified as uranium, and 1 is listed as copper (McClaughry and others, 2020; Figure 3-2).
- Eight exploration wells, drilled in search of oil or natural gas, are located in the southern part of the study area (Wermiel, 1987; Olmstead, 1989; Figure 3-2). These wells were drilled between 1935 and 1981. Four wells, including the Gilmour 1 and 2, N. Gilmour 1, and Wiederkehr 1 wells were located near Buena Vista, ~10 miles southwest of the Hillcrest Property. The Gilmour 1 and 2 wells were drilled to depths of 1,560 ft and 1,565 ft by William Craig in 1969 and 1971. No shows of gas were found, but freshwater was encountered. The N. Gilmour 1 was drilled to a depth of 1,603 ft by Jackson-Dahl in 1971. Gas shows were reported. The Wiederkehr 1 well was drilled to a depth of 3,617 ft by the Portland Gas and Coke Company between 1933 and 1935. Gas and oil were reported in saltwater sands. The Steiwer 1 well, drilled to a depth of 2,845 ft by the Portland Gas and Coke Company in 1935, was located ~7 miles south of the Hillcrest Property in the Salem Hills. There were several gas shows reported, some of which were in saltwater sands. The Independence 12-25 well, drilled to a depth of 4,826 ft by the Oregon Natural Gas Development Corporation in 1980, was located ~7 miles southwest of the Hillcrest Property in the west part of the Salem Hills. The Eocene Spencer Formation was encountered at depths of 3,098 ft and 4,022 ft in the Independence 12-25 well. The Merrill 1 well, drilled to a depth of 5,282 ft by the Reichhold Energy Corporation in 1975, was located ~6 miles southwest of the Hillcrest Property in the west part of the Salem Hills. Eocene sand was encountered at 3,400 feet, but no shows of gas were reported. The Gath 1 well, drilled to a depth of 6,002 ft by the Quintana Petroleum Corporation in 1981, was located ~4 miles southeast of the Hillcrest Property in the Waldo Hills. No shows of gas were reported. All wells were plugged and abandoned after development.
- There are 2 low-temperature geothermal wells in the study area. One low temperature geothermal occurrence is located ~2.5 miles northeast of Hillcrest Property, near four corners, while the second occurrence is located near Pratum, ~9.5 miles northeast of Hillcrest Property. Maximum recorded water temperatures are 154°F for the well at Four Corners and 66°F for the well at Pratum (Niewendorp and others, 2012).

### 3.4.2 Hillcrest Property

There are no mineral occurrences on the Hillcrest Property. There are 3 occurrences of aggregate (sand and gravel) locations within 1 mile of the Hillcrest Property. One occurrence of clay is present ~2.5 miles south of Hillcrest Property, and 1 geothermal occurrence ~2.5 miles northeast of the Hillcrest Property (Figure 3-2).
Figure 3-2. Mineral occurrences in the study area (black circle). The map base is a 1-m lidar DEM hillshade. Some aggregate point locations overlap.
3.5 Mineral Resource Interpolation

The mineral resource potential is based on the interpolation of the study area’s mineral inventory. Each type of commodity was rated based on the criteria explained by Goudarzi (1984) (see Section 5; Table 5-1, Table 5-2). These criteria were adapted for this report so as to determine relative levels of resource potential and relative levels of certainty of assessment within the Hillcrest Property. A field assessment was not conducted in the preparation of this report. The mineral resource potential of the Hillcrest Property is summarized below and listed in Table 3-2:

- The Hillcrest Property has low potential for an undiscovered industrial mineral resource, level of certainty B.
- The Hillcrest Property has low potential for undiscovered aggregate resources, level of certainty B.
- The Hillcrest Property has low potential for undiscovered resources of the following commodities or mineral fuels: metals; coal, and uranium, and thorium, level of certainty B.
- The Hillcrest Property has low potential for undiscovered geothermal or oil and gas resources, level of certainty B.

Table 3-2. Mineral resource potential in Hillcrest Property.

<table>
<thead>
<tr>
<th>Type of Commodity</th>
<th>Resource Potential*</th>
<th>Level of Certainty**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand and gravel (borrow/fill/topsoil)</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Construction Material (crushed/block stone- basalt)</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Limestone</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Clay</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Pumice</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Silica sandstone</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Bentonite</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Metals (precious, base metals)</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Coal</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Uranium and thorium</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Geothermal</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Oil &amp; Gas</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Others industrial minerals: (gemstone materials, perlite, zeolite, manganese, titanium, zirconium)</td>
<td>low</td>
<td>B</td>
</tr>
</tbody>
</table>

*See Section 5.1 for description of levels of resource potential
**See Section 5.2 for descriptions of levels of certainty
4.0 LITERATURE SOURCES

Some references below were consulted as a part of this review but may not be cited in the text body because they contain no information on the ODVA Mineral Estate.


Corcoran, R.E. and Libbey, F.W., 1956, Ferruginous bauxite deposits in the Salem Hills, Marion County: Oregon Department of Geology and Mineral Industries Bulletin 46


Oregon Department of Geology and Mineral Industries, 2018, Mineral Land Reclamation and Regulation database.

Oregon Department of Geology and Mineral Industries, unpublished, Oil and Gas database.


5.0 METHODS AND LIMITATIONS

The Scope-of-Work for this assessment did not include a site visit or field work. The objective of the examination was only to determine and/or confirm through desk-top research that a potential mineral resource exists or there is the potential for one. Data compilation efforts for the assessment includes, but is not limited to the following: published and unpublished geology and mineral/material resource literature available at DOGAMI.

A core part of the mineral inventory process is the review of six datasets:

- MILO-3 (Mineral Information Layer for Oregon, Release 3).
- GTILO-2 (Geothermal Information Layer for Oregon, Release 2).
- MLRR (Mineral Land Reclamation and Regulation program of DOGAMI) databases.
- LR2000, the Federal Bureau of Land Management’s (BLM) electronic database for claims (inactive, closed).
- An unpublished DOGAMI database of oil and gas wells in Oregon.
- OGCD-7 (Oregon Geologic Data Compilation, Release 7).

The collection and presentation of data is facilitated through GIS. This report of findings is tailored to address the required items listed in the Intergovernmental Agreement (IGA), DSL #19-180.

This examination did not include activities such as sampling and systematic geological, geophysical, and geochemical mapping as the basis for determination or confirmation that a mineral resource potential, deposit, or mineral occurrence exists.

A desktop inventory of mineral occurrences cannot alone determine the following:

- The accurate identification of the concentration and occurrence of material in relation to its particular geographical controls.
- The volume of valuable mineral or rock present or removed, and reserves remaining.
- The applicable extraction and processing methods and market factors for its products.

Also, this low-level mineral assessment cannot be the sole basis for an appraisal or the basis for other generally accepted industrial standard for placing a value on and with a resource and the land itself. Users of this report are advised to consult with DOGAMI to gain a better understanding of the inherent limitations of the information herein and its scope of inference.

Provided below are definitions for levels of mineral resource potential and certainty of assessment (modified from Goudarzi, 1984). Under this system, the level of mineral resource potential assigned to a commodity is based on geologic, geochemical, and geophysical characteristics.

An inventory of mineral occurrences cannot be used solely for appraisal purposes or the basis for other generally accepted industrial standard for placing a value on and with resource and the land.
5.1 Levels of Resource Potential (modified from Goudarzi, 1984)

Table 5-1. Levels of resource potential modified from Goudarzi (1984).

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>High mineral resource potential is assigned to areas where geologic, geochemical, and geophysical characteristics indicate a geologic environment favorable for resource occurrence, where interpretations of the data indicate high degree of likelihood for resource accumulation, where data support mineral-deposit models indicating presence of resource, and where evidence indicates that mineral concentration has taken place. Assignment of high resource potential to an area requires some positive knowledge that mineral-forming processes have been active in at least part of the area.</td>
</tr>
<tr>
<td>MEDIUM</td>
<td>Medium mineral resource potential is assigned to areas where geologic, geochemical, and geophysical characteristics indicate a geologic environment favorable for resource occurrence, where and (or) where an application of mineral-deposit models indicates favorable ground for the specified type(s) of deposits.</td>
</tr>
<tr>
<td>LOW</td>
<td>Low mineral resource potential is assigned to areas where geologic, geochemical, and geophysical characteristics define a geologic environment in which the existence of resources is permissive. This broad category embraces areas with dispersed but insignificantly mineralized rock, as well as areas with obvious site limitations and little or no indication of having been mineralized.</td>
</tr>
<tr>
<td>NO</td>
<td>No mineral resource potential is a category that should be reserved for a specific type of resource in a well-defined area.</td>
</tr>
<tr>
<td>UNKNOWN</td>
<td>Unknown mineral resource potential is assigned to areas where information is inadequate to assign a low, moderate, or high level of resource potential.</td>
</tr>
</tbody>
</table>

5.2 Levels of Certainty of Assessment (Goudarzi, 1984)

Table 5-2. Levels of certainty assessment modified from Goudarzi (1984).

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Available information is not adequate for determination of the level of mineral resource potential.</td>
</tr>
<tr>
<td>B</td>
<td>Available information suggests the level of mineral resource potential.</td>
</tr>
<tr>
<td>C</td>
<td>Available information gives a good indication of the level of mineral resource potential.</td>
</tr>
<tr>
<td>D</td>
<td>Available information clearly defines the level of mineral resource potential.</td>
</tr>
</tbody>
</table>
State Land Board

Regular Meeting
August 10, 2021
Agenda Item 3

SUBJECT

Request for approval of a direct sale of 15.0 acres of subsurface minerals and geothermal rights located in Salem, Marion County, Township 8 South, Range 2 West, Section 8, Tax Lot 110, on Joseph Street, LAS File #63387.

ISSUE

Whether the State Land Board should authorize the direct sale of 15.0 acres of subsurface minerals and geothermal rights in Marion County owned by the Oregon Youth Authority to Cascade Legacy Properties LLC.

AUTHORITY

- Oregon Constitution, Article VIII, Sections 2 and 5; pertaining to the Common School Fund and land management responsibilities of the State Land Board.
- ORS 273.055; relating to the power to acquire and dispose of real property.
- ORS 273.171; relating to the duties and authority of the Director.
- OAR 141-073; relating to procedures for the sale, exchange, or release and transfer of mineral and geothermal resources owned by other state agencies.
- Real Estate Asset Management Plan (REAMP), adopted by the Land Board, February 2012.
SUMMARY

On June 1, 2020, Oregon Youth Authority (OYA) requested the sale of approximately 15.0 acres of subsurface mineral and geothermal rights (see map in Appendix A). The surface rights have been sold and the site is in the process of being developed with multifamily homes. Because the City of Salem requires the street right-of-way dedication not be encumbered by lack of mineral rights, the property cannot be developed unless the state sells the mineral rights to the surface owner.

OYA supports the direct release of the mineral rights and has requested that DSL process the minerals release request under OAR 141-073. DSL processes most mineral sales owned by other state agencies under these rules.

A Department of Geology and Mineral Industries mineral potential report (Appendix B) was conducted on December 30, 2020, on a Department of Administrative Services property located at 2450 Strong Road. Because the OYA property falls within the ten-mile radius, the property is also covered under the report. The report concluded the potential for significant value subsurface minerals in this area is low. Even if high-value minerals were found at this location, the property is within city limits and zoning ordinances prohibit surface mining. It is highly unlikely minerals could ever be extracted in this location.

Public notice was sent out to adjacent property owners, local governmental agencies and local tribes. No comments were received.

ORS 273.780 (3) states, “Except as provided in ORS 273.787, the mineral and geothermal resource rights shall be retained by the state in the absence of a finding by the State Land Board upon adequate facts presented to it that their sale or exchange is for the purpose of obtaining the greatest benefit for the people of this state, consistent with the conservation of lands under its jurisdiction under sound techniques of land management.”

The sale of the mineral rights for this property will provide the greatest benefit for the people of this state by enabling this property to be developed with up to 294 multifamily units, providing much-needed housing.

Department policy is to sell subsurface minerals and geothermal rights for a land transaction fee for a minimum transaction price of $250. The sale price for this transaction is the minimum transaction price of $250.

RECOMMENDATION

The Department recommends the State Land Board approve the direct sale of the subsurface minerals and geothermal rights located in Marion County at Township 8 South, Range 2 West, Section 8, Tax Lot 110, to Cascade Legacy Properties LLC.
APPENDICES

A. Site Map
B. Mineral Report
Appendix A

Cascade Legacy Properties Minerals Sale (App#63387)
T8S R2W Section 08, Tax Lot 110
15.0-acres
Marion County

Oregon Youth Authority Minerals

This map depicts the approximate location and extent of a Department of State Lands Proprietary authorization for use. This product is for informational purposes only and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.
MINERAL RESOURCE ASSESSMENT REPORT

HILLCREST PROPERTY
MARION COUNTY, OREGON

by Carlie J.M. Duda¹ and Jason D. McLaughry²

for

Oregon Department of State Lands

2020

¹Oregon Department of Geology and Mineral Industries, 800 NE Oregon Street, Suite 965 Portland, Oregon 97232
²Oregon Department of Geology and Mineral Industries, Baker City Field Office, 1995 3rd Street, Suite 130, Baker City, OR 97814
DISCLAIMER

The Oregon Department of Geology and Mineral Industries is not liable for any claimed damage from the use of this information.

This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information. This publication cannot substitute for site-specific investigations by qualified practitioners. Site-specific data may give results that differ from the results shown in the publication.
TABLE OF CONTENTS

1.0 Introduction ....................................................................................................................................... 5
  1.1 Instructions......................................................................................................................................... 5
  1.2 Layout of Report................................................................................................................................. 5

2.0 Physical setting ................................................................................................................................... 6

3.0 Results ................................................................................................................................................ 9
  3.1 Status of Mineral Surveys ................................................................................................................... 9
  3.2 Mining Claims/Leases ....................................................................................................................... 10
  3.3 Mineral Setting ................................................................................................................................. 10
  3.4 Known Mineral Occurrences ............................................................................................................ 11
  3.5 Mineral Resource Interpolation ....................................................................................................... 15

4.0 Literature Sources .............................................................................................................................. 18

5.0 Methods and Limitations .................................................................................................................. 18
  5.1 Levels of Resource Potential (modified from Goudarzi, 1984) ........................................................ 19
  5.2 Levels of Certainty of Assessment (Goudarzi, 1984) ........................................................................ 19

LIST OF FIGURES

Figure 2-1. Vicinity map for Hillcrest Property ................................................................................................ 7
Figure 2-2. Map of land ownership in the study area ..................................................................................... 8
Figure 3-1. Simplified geologic map of the study area .................................................................................. 12
Figure 3-2. Mineral occurrences in the study area ........................................................................................ 14

LIST OF TABLES

Table 2-1. Hillcrest Property physical setting ................................................................................................. 6
Table 3-1. Minerals occurrences within the study area ................................................................................. 11
Table 3-2. Mineral resource potential in Hillcrest Property ........................................................................... 15
Table 5-1. Levels of resource potential modified from Goudarzi (1984). ..................................................... 19
Table 5-2. Levels of certainty assessment modified from Goudarzi (1984). ................................................ 19
SUMMARY

This document describes a desktop mineral resource assessment of state-owned Tax Lot, 01499 in T. 8 S., R. 3 W., Secs. 11 and 12, Marion County, Oregon (herein called Hillcrest Property). The Oregon Department of Geology and Mineral Industries (DOGAMI) conducted this study at the request of the Oregon Department of State Lands (DSL).

The DSL contacted DOGAMI on July 7, 2020 requesting a mineral resource assessment report for Hillcrest Property. The cost estimate, signed by both DSL and DOGAMI, was finalized on December 11, 2020, which authorized the work to proceed. A desktop mineral resource assessment was completed on December 30, 2020. The format of this report and its contents follows the requirements of the DSL-DOGAMI Interagency Agreement (DSL #19-180) for the 2019-2023 biennia.

This review is a low-level, qualitative assessment, designed to provide DSL with general information about the mineral resource potential of Hillcrest Property. A detailed assessment and valuation of potential mineral resources, based on site visits and sampling, was beyond the scope for this work. The occurrence of minerals within the “study area”, an approximately 10 miles (16 km) radius area that borders Hillcrest Property, is summarized below:

<table>
<thead>
<tr>
<th>Type of Commodity</th>
<th>Study Area (Mineral Occurrences)</th>
<th>Hillcrest Property (Mineral Occurrences)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate (sand and gravel; stone, crushed and block; basalt)</td>
<td>126</td>
<td>0</td>
</tr>
<tr>
<td>Industrial mineral (clay)</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Metals/minerals (bauxite, iron, and titanium; copper)</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Coal</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Uranium and thorium</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Geothermal features (abandoned)</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Oil and gas wells (abandoned)</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>
Hillcrest Property’s mineral resource potential is summarized below:

<table>
<thead>
<tr>
<th>Type of Commodity</th>
<th>Resource Potential</th>
<th>Level of Certainty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand and gravel (borrow/fill/topsoil)</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Construction material (crushed/block stone- basalt)</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Limestone</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Clay</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Pumice</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Silica sandstone</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Bentonite</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Metals (precious, base metals)</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Coal</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Uranium and thorium</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Geothermal</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Oil and gas</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Other industrial minerals (gemstone materials, perlite, zeolite, manganese, titanium, zirconium)</td>
<td>low</td>
<td>B</td>
</tr>
</tbody>
</table>

*See Section 5.1 for description of levels of resource potential
**See Section 5.2 for descriptions of levels of certainty

Hillcrest Property has a low potential, level of certainty B (Goudarzi, 1984; see Sections 5.1 and 5.2 in the report; Table 5-1, Table 5-2) for the following non-fuel mineral commodities, including aggregate, industrial minerals (clay, silica sand, pumice, limestone, gem material, dimension stone, other clays (bentonite), perlite, zeolites, manganese, titanium, zirconium, etc.), and metals (precious, oxide, and base) and mineral fuels including coal, uranium/thorium, geothermal, oil, and gas.

1.0 INTRODUCTION

This report describes a desktop mineral resource assessment of the Hillcrest Property, Tax Lot 01499 in T. 8 S., R. 3 W., Secs. 11 and 12, Marion County, Oregon (Figure 2-1). The Hillcrest Property covers 44.6 acres.

1.1 Instructions

The DSL contacted DOGAMI on July 7, 2020 requesting a mineral resource assessment report for Hillcrest Property. The cost estimate, signed by both DSL and DOGAMI, was finalized on December 11, 2020, which authorized the work to proceed. A desktop mineral resource assessment was completed on December 30, 2020. The format of this report and its contents follows the requirements of the DSL-DOGAMI Interagency Agreement (DSL #19-180) for the 2019-2023 biennia.

1.2 Layout of Report

For the convenience of the reader, this report is divided into the following five sections:

- Section 1 is the introduction. It contains the project’s instructions and the layout of report.
- Section 2 is a description of the physical and geologic setting.
Section 3 is a desktop assessment that describes the Hillcrest Property's potential mineral resources.

Section 4 is a list of references; some of which were consulted as a part of this review but may not be cited in the text body because they contain no information on the Hillcrest Property.

Section 5 contains a brief description of the methods and limitations of the study, along with two reference tables: Levels of Resource Potential and Levels of Certainty. These tables provide a dual scheme that expresses the favorability of the subject area for a given resource and confidence from which the level of resource potential was assigned.

## 2.0 PHYSICAL SETTING

The Hillcrest Property is located along the east side of West Middle Fork Pringle Creek, in South Salem in Marion County, northwest Oregon (Figure 2-1). The Hillcrest Property covers an area of 44.6 acres. Table 2-1 describes the physical setting of the Hillcrest Property; Figure 2-1 shows its location and extent. The parcel's elevation ranges from approximately 222 to 327 feet, descending from south to north. The highest point in the southern part of Hillcrest Property is elevated above the main part of Pringle Creek at a maximum elevation of 327 ft (Figure 2-1). None of the Hillcrest Property is within a FEMA 100-year Flood Zone (Figure 2-1). FEMA 100-year Flood Zone areas are constrained to the main channels and adjacent areas along the floor of the Willamette Valley (Figure 2-1). The “study area”, is an approximately 10 mile (16 km) radius area centered on the Hillcrest Property (Figure 2-2).

### Table 2-1. Hillcrest Property physical setting.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>44.6 acres</td>
</tr>
<tr>
<td>Topography</td>
<td>Flat</td>
</tr>
<tr>
<td>Shape</td>
<td>irregular</td>
</tr>
<tr>
<td>Zoning</td>
<td>Public &amp; semi-public Uses (from Oregon Explorer; <a href="https://spatialdata.oregonexplorer.info/geoportal/details?id=49bfb86d4e594a3c8fa8d968aaa45e9">https://spatialdata.oregonexplorer.info/geoportal/details?id=49bfb86d4e594a3c8fa8d968aaa45e9</a>)</td>
</tr>
</tbody>
</table>

This part of Marion County has a mild wet climate with warm dry summers and mild rainy winters. The January mean low temperature is approximately 35°F and the July mean high is 82°F. Precipitation is heavy and consistent during the late fall to early-summer wet season, with 90 percent the annual rainfall occurring between October and May and average annual precipitation of 40 inches. Snowfall is minimal except in areas of higher elevation above 800 feet (which includes the South Hills and Turner Hills. The surrounding County is a mixture of cultivated agricultural lands, open grasslands, oak groves, and forest lands.

The Hillcrest Property is accessible from Reed Road SE, via Interstate 5, Kuebler Boulevard, and Battle Creek Road. Land ownership within the study area is predominantly private, with areas of State, Federal, and County lands. State-owned and city-owned parcels are located along the Willamette River (Figure 2-2). The Hillcrest Property is completely surrounded by private land.
Figure 2-1. Vicinity map for Hillcrest Property (red shade). Basemap is scanned version of a 1:24,000 scale USGS topographic map; overlay is 1-m lidar hillshade. Source is NGS Esri Online. Blue shade is the FEMA high-risk flood zone (A).
Figure 2-2. Map of land ownership in the study area. The black circle, which defines the study area, is a 10-mile radius around the Hillcrest Property. The basemap is a 1-m lidar hillshade. Inset map is an oblique view of the Hillcrest Property looking north toward McNary Field. Imagery is from Google Earth™.
3.0 RESULTS

This section presents the results of the mineral resource scoping of the Hillcrest Property. While the focus of this assessment is the Hillcrest Property, the larger study area will be assessed to provide context for the site. A study area of this size provides a greater level of information about the identified occurrence of minerals and the Hillcrest Property’s mineral setting.

Where this report indicates a potential mineral resource might exist, it is important to understand what a “resource” is and means. According to the U.S. Bureau of Mines and U.S. Geological Survey (USGS) Circular 381, “Principles of a Resource/Reserve Classification System, (1980)”, “resource” means, “[a] concentration of naturally occurring solid, liquid, or gaseous material in or on the Earth’s crust in such form and amount that economic extraction of a commodity from the concentration is currently or potentially feasible” (p. 1). An identified resource is a “resource whose location, grade, quality, and quantity are known or estimated from specific geologic evidence” (p. 1).

A resource or identified resource does not infer or imply a “reserve base” or “reserve” exists. A “reserve base” is “that part of an identified resource that meets specific minimum physical and chemical criteria related to current mining and production practices, including those for grade, quality, thickness, and depth” (p. 2). The meaning of a “reserve” is “that part of the reserve base which could be economically extracted or produced at the time of determination” (p. 2).

The non-fuel mineral commodities evaluated for this assessment include aggregate, industrial minerals (clay, silica sand, pumice, and limestone), and metals (precious, oxide, and base). Mineral fuel commodities evaluated are coal, uranium/thorium, geothermal, oil, and gas. Occurrences of other commodities (gem material, dimension stone, other clays (bentonite), perlite, zeolites manganese, titanium, zirconium, etc.) will be reported as industrial minerals when encountered as part of this evaluation.

The term “aggregate” includes gravel and sand and all consolidated stone used for construction and roads. Stone may be further classified as crushed—rock that has been broken into smaller fragments—and blocks. Also, no distinction is made between a mineral occurrence and mineral deposit. The term “mineral occurrence” applies to both and is used to refer to a concentration of a mineral that could be considered valuable by someone somewhere or that is of scientific or technical interest.

3.1 Status of Mineral Surveys

- The locations of known mineral occurrences in the study area are summarized in the Mineral Information Layer for Oregon, release 3 (McCloughry and others, 2020), Niewendorp and others (2012), Wermiel (1987), and Olmstead (1989).
- Gray and Throop (1981) reported on the rock material resources of a four-county area, including Marion County. They provided information useful for short-range planning for rock material supplies used by county planning and public works departments, County and State road and highway departments, private contractors, and private citizens. Basic data for a number of mine sites within the study area was reported, including an occurrence of construction aggregate sited directly adjacent to the Hillcrest Property.
- Corcoran and Libbey (1956) reported on ferruginous bauxite deposits in the Salem Hills. Laterite sections of these deposits are scarce, because they rapidly deteriorate to form soil. Four site occurrences are within the study area; 2 sites of laterite are located ~3.5 to 4.5 miles south of the Hillcrest Property. Two sites of bauxite are also present in the study area; one site is located ~6
miles north of the Hillcrest Property in the Eola Hills, while another site is located ~4 miles east in the Waldo Hills.

- Peterson (1969) reported an occurrence of secondary mineralization of uranium in the study area that was not economically viable.
- Schafer (1956) reported the occurrence of secondary mineralization of uranium on Illahe Hill, ~4.5 miles west of the Hillcrest Property. The occurrence is hosted in tuffaceous marine sandstone of the Oligocene and upper Eocene Eugene Formation. Secondary minerals occur in small amounts over a wide area.
- Wermiel (1987) and Olmstead (1989) reported the locations of hydrocarbon exploration in Marion County. Eight oil and gas exploration wells (abandoned) are present, primarily in the southwest part of the study area, along the Willamette River.
- Wilson and Treasher (1938) reported on refractory clays of Western Oregon, including the Macleay Clay deposit, located ~5 miles east of the Hillcrest Property.

### 3.2 Mining Claims/Leases

DOGAMI does not maintain records pertaining to public claims or private mineral leases. Land ownership within the study area is mostly private, with less amounts of State-owned and Federal lands (Figure 2-2). The BLM does make some records of mining claims on Federal lands easily available to the public on its LR2000 website (www.blm.gov/lr2000/index.htm) (LR2000, 2013). Only certain types of mineral discoveries can be claimed; these minerals are broadly known as “locatable” (possessing a distinct and special value) and include such things as precious metals, gems, high-value industrial minerals, uranium, etc. Locatable minerals generally do not include construction aggregate, common industrial minerals, oil, gas, coal, or geothermal resources.

No mining claims were located either on the Hillcrest Property, or in the study area. There are 2 closed placer claims in Polk County (outside the study area), and an additional 1,140 mining claims in Marion County (outside the study area).

### 3.3 Mineral Setting

Brownfield and Schlicker (1981), McClaughry and others (2010), O’Connor and others (2001), Tolan and Beeson (1999), Tolan and others (2000), and Yeats and others (1996) provided the most current and detailed geological mapping in the study area. Later Franczyk and others (2020) compiled that work into a statewide digital compilation and database. This compilation is used to illustrate the geology of the study area in Figure 3-1.

The geology of the study area consists of the upper Eocene Spencer, upper Eocene and Oligocene Eugene, upper Eocene and Oligocene Keasey, and Oligocene and lower Miocene Scotts Mills formations (Figure 3-1). Upper Eocene diabase and Oligocene intrusive rocks locally intrude the section. The Eocene-Oligocene stratigraphic section is unconformably overlain by the early to middle Miocene Columbia River Basalt Group (CRBG). Rocks are variably offset by a number of northeast- to southwest-striking normal faults, including the Turner fault, that are intersected by northwest-southeast-striking normal faults (Yeats and others, 1996; Tolan and others, 2000; Figure 3-1). Extensive areas of Quaternary alluvial and deposits fill the broad Mill Creek and Willamette River valleys (Figure 3-1).

The Hillcrest Property is underlain by the early Miocene Grande Ronde Basalt of the CRBG between the Mill Creek and Willamette River valleys (Figure 3-1). Tolan and others (2000) showed several
orientation measurements from the Grande Ronde Basalt, indicating a low-angle, northeast dipping unit. The Grande Ronde Basalt at the Hillcrest Property is mantled by high terrace gravels of the Willamette Group and Missoula Flood sands and gravels.

### 3.4 Known Mineral Occurrences

In this report, no distinction is made between a mineral occurrence and mineral deposit. The term “mineral occurrence” applies to both and is used to refer to a concentration of a mineral that could be considered valuable by someone somewhere or that is of scientific or technical interest. The known mineral occurrences, geothermal features, and oil and gas exploratory wells in the study area, are tabulated below in **Table 3-2** and shown in **Figure 3-2**. There are 3 occurrences of aggregate (sand and gravel) within 1 mile of the Hillcrest Property. One occurrence of clay is located ~2.5 miles south of the Hillcrest Property, and 1 geothermal occurrence is located ~2.5 miles northeast of Hillcrest Property (**Figure 3-2**).

**Table 3-1. Minerals occurrences within the study area.**

<table>
<thead>
<tr>
<th>Type of Commodity</th>
<th>Study Area (Mineral Occurrences*)</th>
<th>Hillcrest Property (Mineral Occurrences)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate (sand and gravel; stone, crushed and block; basalt)</td>
<td>126</td>
<td>0</td>
</tr>
<tr>
<td>Industrial mineral (clay)</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Metals/minerals (bauxite, iron, and titanium; copper)</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Coal</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Uranium and thorium</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Geothermal features (abandoned)</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Oil and gas wells (abandoned)</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>

*Mineral occurrence information queried from three spatial databases (see Section 4).*
3.4.1 Study Area

- There are 126 aggregate sites in the study area (some points on Figure 3-2 overlap), 84 of which are sand and gravel or fill deposits; Three of these sites are located within 1 mile from the Hillcrest Property. The other 42 sites produced crushed stone, block, or both (McCloughry and others, 2020).
These low-unit-value, high-bulk commodities serve local markets. Specific site conditions or restrictions associated with each site are unknown.

- There are 4 occurrences of industrial minerals, all of which are clay (McCloughry and others, 2020; Figure 3-2).
- There are 9 occurrences of metals. Six of these occurrences are bauxite, iron, titanium, 2 occurrences are identified as uranium, and 1 is listed as copper (McCloughry and others, 2020; Figure 3-2).
- Eight exploration wells, drilled in search of oil or natural gas, are located in the southern part of the study area (Wermiel, 1987; Olmstead, 1989; Figure 3-2). These wells were drilled between 1935 and 1981. Four wells, including the Gilmour 1 and 2, N. Gilmour 1, and Wiederkehr 1 wells were located near Buena Vista, ~10 miles southwest of the Hillcrest Property. The Gilmour 1 and 2 wells were drilled to depths of 1,560 ft and 1,565 ft by William Craig in 1969 and 1971. No shows of gas were found, but freshwater was encountered. The N. Gilmour 1 was drilled to a depth of 1,603 ft by Jackson-Dahl in 1971. Gas shows were reported. The Wiederkehr 1 well was drilled to a depth of 3,617 ft by the Portland Gas and Coke Company between 1933 and 1935. Gas and oil were reported in saltwater sands. The Steiwer 1 well, drilled to a depth of 2,845 ft by the Portland Gas and Coke Company in 1935, was located ~7 miles south of the Hillcrest Property in the Salem Hills. There were several gas shows reported, some of which were in saltwater sands. The Independence 12-25 well, drilled to a depth of 4,826 ft by the Oregon Natural Gas Development Corporation in 1980, was located ~7 miles southwest of the Hillcrest Property in the west part of the Salem Hills. The Eocene Spencer Formation was encountered at depths of 3,098 ft and 4,022 ft in the Independence 12-25 well. The Merrill 1 well, drilled to a depth of 5,282 ft by the Reichhold Energy Corporation in 1975, was located ~6 miles southwest of the Hillcrest Property in the west part of the Salem Hills. Eocene sand was encountered at 3,400 feet, but no shows of gas were reported. The Gath 1 well, drilled to a depth of 6,002 ft by the Quintana Petroleum Corporation in 1981, was located ~4 miles southeast of the Hillcrest Property in the Waldo Hills. No shows of gas were reported. All wells were plugged and abandoned after development.
- There are 2 low-temperature geothermal wells in the study area. One low temperature geothermal occurrence is located ~2.5 miles northeast of Hillcrest Property, near four corners, while the second occurrence is located near Pratum, ~9.5 miles northeast of Hillcrest Property. Maximum recorded water temperatures are 154°F for the well at Four Corners and 66°F for the well at Pratum (Niewendorp and others, 2012).

### 3.4.2 Hillcrest Property

There are no mineral occurrences on the Hillcrest Property. There are 3 occurrences of aggregate (sand and gravel) locations within 1 mile of the Hillcrest Property. One occurrence of clay is present ~2.5 miles south of Hillcrest Property, and 1 geothermal occurrence ~2.5 miles northeast of the Hillcrest Property (Figure 3-2).
Figure 3-2. Mineral occurrences in the study area (black circle). The map base is a 1-m lidar DEM hillshade. Some aggregate point locations overlap.
3.5 Mineral Resource Interpolation

The mineral resource potential is based on the interpolation of the study area’s mineral inventory. Each type of commodity was rated based on the criteria explained by Goudarzi (1984) (see Section 5; Table 5-1, Table 5-2). These criteria were adapted for this report so as to determine relative levels of resource potential and relative levels of certainty of assessment within the Hillcrest Property. A field assessment was not conducted in the preparation of this report. The mineral resource potential of the Hillcrest Property is summarized below and listed in Table 3-2:

- The Hillcrest Property has low potential for an undiscovered industrial mineral resource, level of certainty B.
- The Hillcrest Property has low potential for undiscovered aggregate resources, level of certainty B.
- The Hillcrest Property has low potential for undiscovered resources of the following commodities or mineral fuels: metals; coal, and uranium, and thorium, level of certainty B.
- The Hillcrest Property has low potential for undiscovered geothermal or oil and gas resources, level of certainty B.

Table 3-2. Mineral resource potential in Hillcrest Property.

<table>
<thead>
<tr>
<th>Type of Commodity</th>
<th>Resource Potential*</th>
<th>Level of Certainty**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand and gravel (borrow/fill/topsoil)</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Construction Material (crushed/block stone- basalt)</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Limestone</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Clay</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Pumice</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Silica sandstone</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Bentonite</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Metals (precious, base metals)</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Coal</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Uranium and thorium</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Geothermal</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Oil &amp; Gas</td>
<td>low</td>
<td>B</td>
</tr>
<tr>
<td>Others industrial minerals: (gemstone materials, perlite, zeolite, manganese, titanium, zirconium)</td>
<td>low</td>
<td>B</td>
</tr>
</tbody>
</table>

*See Section 5.1 for description of levels of resource potential
**See Section 5.2 for descriptions of levels of certainty
4.0 LITERATURE SOURCES

Some references below were consulted as a part of this review but may not be cited in the text body because they contain no information on the ODVA Mineral Estate.


Corcoran, R.E. and Libbey, F.W., 1956, Ferruginous bauxite deposits in the Salem Hills, Marion County: Oregon Department of Geology and Mineral Industries Bulletin 46


Oregon Department of Geology and Mineral Industries, 2018, Mineral Land Reclamation and Regulation database.

Oregon Department of Geology and Mineral Industries, unpublished, Oil and Gas database.


5.0 METHODS AND LIMITATIONS

The Scope-of-Work for this assessment did not include a site visit or field work. The objective of the examination was only to determine and/or confirm through desk-top research that a potential mineral resource exists or there is the potential for one. Data compilation efforts for the assessment includes, but is not limited to the following: published and unpublished geology and mineral/material resource literature available at DOGAMI.

A core part of the mineral inventory process is the review of six datasets:
- MILO-3 (Mineral Information Layer for Oregon, Release 3).
- GTILO-2 (Geothermal Information Layer for Oregon, Release 2).
- MLRR (Mineral Land Reclamation and Regulation program of DOGAMI) databases.
- LR2000, the Federal Bureau of Land Management’s (BLM) electronic database for claims (inactive, closed).
- An unpublished DOGAMI database of oil and gas wells in Oregon.
- OGCD-7 (Oregon Geologic Data Compilation, Release 7).

The collection and presentation of data is facilitated through GIS. This report of findings is tailored to address the required items listed in the Intergovernmental Agreement (IGA), DSL #19-180.

This examination did not include activities such as sampling and systematic geological, geophysical, and geochemical mapping as the basis for determination or confirmation that a mineral resource potential, deposit, or mineral occurrence exists.

A desktop inventory of mineral occurrences cannot alone determine the following:
- The accurate identification of the concentration and occurrence of material in relation to its particular geographical controls.
- The volume of valuable mineral or rock present or removed, and reserves remaining.
- The applicable extraction and processing methods and market factors for its products.

Also, this low-level mineral assessment cannot be the sole basis for an appraisal or the basis for other generally accepted industrial standard for placing a value on and with a resource and the land itself. Users of this report are advised to consult with DOGAMI to gain a better understanding of the inherent limitations of the information herein and its scope of inference.

Provided below are definitions for levels of mineral resource potential and certainty of assessment (modified from Goudarzi, 1984). Under this system, the level of mineral resource potential assigned to a commodity is based on geologic, geochemical, and geophysical characteristics.

An inventory of mineral occurrences cannot be used solely for appraisal purposes or the basis for other generally accepted industrial standard for placing a value on and with resource and the land.
5.1 Levels of Resource Potential (modified from Goudarzi, 1984)

Table 5-1. Levels of resource potential modified from Goudarzi (1984).

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>Mineral resource potential is assigned to areas where geologic, geochemical, and geophysical characteristics indicate a geologic environment favorable for resource occurrence, where interpretations of the data indicate high degree of likelihood for resource accumulation, where data support mineral-deposit models indicating presence of resource, and where evidence indicates that mineral concentration has taken place. Assignment of high resource potential to an area requires some positive knowledge that mineral-forming processes have been active in at least part of the area.</td>
</tr>
<tr>
<td>MEDIUM</td>
<td>Mineral resource potential is assigned to areas where geologic, geochemical, and geophysical characteristics indicate a geologic environment favorable for resource occurrence, where interpretations of the data indicate high degree of likelihood for resource accumulation, where and (or) where an application of mineral-deposit models indicates favorable ground for the specified type(s) of deposits.</td>
</tr>
<tr>
<td>LOW</td>
<td>Mineral resource potential is assigned to areas where geologic, geochemical, and geophysical characteristics define a geologic environment in which the existence of resources is permissive. This broad category embraces areas with dispersed but insignificantly mineralized rock, as well as areas with obvious site limitations and little or no indication of having been mineralized.</td>
</tr>
<tr>
<td>NO</td>
<td>Mineral resource potential is a category that should be reserved for a specific type of resource in a well-defined area.</td>
</tr>
<tr>
<td>UNKNOWN</td>
<td>Mineral resource potential is assigned to areas where information is inadequate to assign a low, moderate, or high level of resource potential.</td>
</tr>
</tbody>
</table>

5.2 Levels of Certainty of Assessment (Goudarzi, 1984)

Table 5-2. Levels of certainty assessment modified from Goudarzi (1984).

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Available information is not adequate for determination of the level of mineral resource potential.</td>
</tr>
<tr>
<td>B</td>
<td>Available information suggests the level of mineral resource potential.</td>
</tr>
<tr>
<td>C</td>
<td>Available information gives a good indication of the level of mineral resource potential.</td>
</tr>
<tr>
<td>D</td>
<td>Available information clearly defines the level of mineral resource potential.</td>
</tr>
</tbody>
</table>