

## VI. MITIGATION MEASURES

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### FINAL ENVIRONMENTAL IMPACT REPORT NO. 89-1

These mitigation measures are required of the Holly-Seacliff Specific Plan pursuant to Final Environmental Impact Report 89-1 and should be imposed on future projects in the Specific Plan area.

#### Land Use

##### On-Site Land Uses

1. Prior to issuance of building permits for individual tracts, the applicant should demonstrate that service vehicle access to all remaining operating oil wells on site is monitored through the existing or proposed residential tracts.
2. All potential buyers and renters of on-site residences should be notified of the affects resulting from on-site and off-site oil production activities. The notification should state the frequency and locations of maintenance and service operations. The notification should indicate that noise levels from oil activities may also significantly increase during these times.

#### Air Quality

1. Because it only takes a small amount of material to generate odors, it is important to maintain a very clean operation. Therefore, any oil spilled on the ground should be quickly cleaned up. Well sumps should be pumped out after pulling a well and periodically in the interim. Maintenance of seals and gaskets on pumps and piping should be performed whenever leaks are evident. General clean-up of the site should result in significant improvements in the level of odor found in the area.
2. Appropriately designed, vapor recovery systems which pull the gas off the well casing should be employed, as well as vapor recovery systems for oil transport trucks. A similar system could be employed for any remaining storage facilities on site.

## Noise

1. Noise levels generated by the oil operations should be mitigated to levels consistent with the Huntington Beach Noise Ordinance, by locating consolidation area(s) at least 300 feet from the nearest residential or other sensitive land uses (locating consolidation areas within industrial-use areas would be the most desirable from a noise standpoint). The oil wells could be located closer to sensitive land uses if a perimeter wall with a minimum height of 8 feet was utilized around the consolidation area(s). The following mitigation measures assume a 100 foot distance to the receptor and the mitigation affects of an 8 foot sound wall. Additional analysis of the consolidation area(s) will be necessary when phasing plans become available.

### Oil Well Drilling Operations

2. The results show that in order for the drilling operations to satisfy the Huntington Beach Noise Ordinance outdoor standards, electric motors with acoustic blankets must be used. Diesel motors even when shielded by acoustic blankets will not meet the nighttime Noise Ordinance standards at the on-site and off-site residences and will not meet the daytime Noise Ordinance standards at the on-site residences. If there are plans to conduct the drilling operations during the nighttime hours, then according to the Oil Code, the operations must be soundproofed. Acoustic blankets as well as an 8 foot high masonry wall along the site perimeter will likely reduce the noise levels to below the Noise Ordinance standards.

### Oil Well Pumping

3. The well pumps used in the consolidation area should be submerged. If other types of well pumps such as ground level electric or diesel pumps may be necessary. Specific mitigation measures should be presented in an additional noise study.

### Well Pulling, Redrilling and Service Drilling Operations

4. Well pulling and drilling operations are confined to daytime hours (7:00 a.m. to 10:00 p.m.) by the Oil Code. Any redrilling performed at night must provide soundproofing to comply with the Noise Ordinance. The Oil Code prohibits the pulling of wells during the nighttime hours (10:00 to 7:00 a.m.). Well maintenance activities should also be conducted between the hours of 7:00 a.m. and 10:00 p.m. only. Although high levels of noise may be generated by routine well maintenance operations, these activities would occur inside the noise barrier surrounding the consolidation area.

5. Service drilling for this project will be conducted during the daytime hours only. Data on service drilling operations indicate that with a diesel-powered service rig and an 8 foot high noise barrier, the noise level at 100 feet will likely be 55 dBA which corresponds to the City's daytime Noise Ordinance standard. All servicing of the wells must comply with the noise standards contained in the Huntington Beach code.

#### Truck Operations

6. Truck operations should be limited to daytime hours only (7 a.m. to 10 p.m.)

#### Helicopter Operations

7. A notice (and statement of acknowledgement) to prospective homeowners is required stating that the property is subject to overflight, sight and sound of helicopters associated with the police facility.

#### Oil Facilities

1. Future Specific Plan(s) should include an area or areas for the consolidation of oil well facilities.
2. All new development proposals should be accompanied by:
  - A plan which addresses the requirements for abandoned wells.
  - The abandonment plans for existing wells.
  - The operational plans for any remaining wells and facilities.

These plans must satisfy the requirements of the City of Huntington Beach and the Division of Oil and Gas.

3. The criteria for the approval of development plans within oil districts should include:
  - (a) That enough open space has been reserved around the oil operation site to allow existing and future equipment which could reasonably be expected to be used on the site, including any setbacks from new development required by the Fire Chief.
  - (b) That adequate access to all operation sites is provided for portable equipment and emergency vehicles.
  - (c) That reasonable expansion of the existing facilities, if permitted in the oil district, can be accomplished.

- (d) That any proposed development includes all provisions for sound-proofing and fire protection required by the Fire Chief.
- (e) That screening of oil facilities from any new development is included in the plan.

- 4. As future development occurs, continued subsidence rate monitoring for the region of the subject site is necessary to determine if subsidence rates are declining with current water injection methods being used at operating oil production facilities.
- 5. The use of post-tensioned slabs should be considered in the foundation design in order to eliminate distress to structures and slabs from minor regional subsidence. Although this measure will provide for a more rigid slab, it will be no means eliminate distress to foundations resulting from the rapid subsidence of the land from continued oil and gas withdrawal.

## Cultural Resources

### Archaeology

- 1. It is suggested that the research design be prepared by the Principal Investigator selected to perform the work and that it be reviewed by a second consulting archaeologist. This step will help insure the completeness and viability of the research design prior to its implementation. The involvement of a second professional is viewed as an inexpensive means of insuring that no major elements are overlooked.
- 2. The archaeological deposits within the Holly-Seacliff study area should be subjected to a program of excavation designed to recover sufficient data to fully describe the sites. The following program is recommended:
  - a. Analysis of the collections made by the Pacific Coast Archaeological Society, Long Beach State University and any community college which has such material. If the collections are properly provenienced and are accompanied by adequate documentation, they should be brought together during this phase and complete analysis performed. Of particular importance during this phase is the recovery of survey date to be used to determine the exact locations of previous excavation efforts.
  - b. Prior to the beginning of any excavation effort, a burial strategy should be developed by the archaeologist retained to accomplish the excavation members of the Native American

community and appropriate City Staff. The strategy should address details of the handling and processing of human remains encountered during excavation, as well as the ultimate disposition of such remains.

c. Completion of test excavations should be made at each of the archaeological deposits. The information gained from the test excavation will guide the following data recovery excavation. The excavations should have two primary goals:

- Definition of site boundaries and depth.
- Determination of the significance of the site and its degree of preservation.

d. A statistically valid sample of site material should be excavated. The data recovery excavation should be conducted under the provisions of a carefully developed research design. The research questions presented earlier in this report should be incorporated into the research design, other important research questions should be developed from the test excavation data included, and a statement of methodology to be observed must be included.

e. A qualified observer appointed by the Principal Investigator/Archaeologist should monitor grading of the archaeological sites to recover important material which might appear. The monitor will be assigned by the Principal Investigator. This activity may require some minor delay or redirecting of grading while material is being recovered. The observer should be prepared to recover material as rapidly as is consistent with good archaeological practice. Monitoring should be on a full time basis when grading is taking place on or near an archaeological deposit. However, the grading should terminate when the cultural deposit has been entirely removed and clearly sterile deposits exposed.

f. All excavation and ground disturbing observation projects should include a Native American Observer. Burials are known to exist at some of the sites, a circumstance which is extremely important to the Native American community.

g. A detailed professional report should be prepared which fully describes the site and its place in pre-history. Reports should receive sufficient distribution which includes the City, the County and the UCLA repository for archeology to insure their availability to future researchers.

h. Arrangements should be made for proper curation of the collections. It is expected that large quantities of materials will be collected during the excavation. Curation should be at an institution which has the proper facilities for storage, display and use by interested scholars and the general public.

3. The shell and lithic scatters should be subjected to test excavation to determine if they are or are not in situ archaeological deposits. If any of the scatters prove to be in situ archaeological material, a site record should be prepared and submitted to the Archaeological Survey, University of California, Los Angeles, and the site should be treated as in mitigation number one. If the sites are shown to be not archaeological in nature or not in situ, then no further action should be taken.
4. Ground disturbing activity within the study area should be monitored by a qualified observer assigned by the Principle Investigator/Archaeologist to determine if significant historic deposits, (e.g. foundations, trash deposits, privy pits and similar features) have been exposed. The monitoring should be on a full-time basis, but can be terminated when clearly undisturbed geologic formations are exposed. If such exposures occur, appropriate collections should be made, followed by analysis and report preparation. Historic material may be encountered anywhere within the Holly-Seacliff property, but the area around the old Holly sugar Refinery is probably more sensitive than the balance of the project area. Historical material recovered at the archaeological sites should be treated with those deposits.
5. The plaque commemorating oil well Huntington A-1 should be preserved. As development in the area continues, it may be desirable to upgrade this feature.

#### Paleontology

6. A qualified paleontologist should be retained to periodically monitor the site during grading or extensive trenching activities that cut into the San Pedro Sand or the Quaternary marine terrace units.
7. In areas where fossils are abundant, full-time monitoring and salvage effort will be necessary ( 8 hours per day during grading or trenching activities). In areas where no fossils are being uncovered, the monitoring time can be less than eight hours per day.

8. The paleontologist should be allowed to temporarily divert or direct grading operations to facilitate assessment and salvaging of exposed fossils.
9. Collection and processing of matrix samples through fine screens will be necessary to salvage any microvertebrate remains. If a deposit of microvertebrates is discovered, matrix material can be moved off to one side of the grading area to allow for further screening without delaying the developmental work.
10. All fossils and their contextual stratigraphic data should go to an institution with a research interest in the materials, such as the Orange County Natural History Foundation.

### Human Health and Safety

#### Surface Oil Contamination

1. Prior to grading and development, a site reconnaissance should be performed including a phased Environmental Site Assessment to evaluate areas where contamination of the surficial soils may have taken place. The environmental assessment should evaluate existing available information pertinent to the site and also undertake a limited investigation of possible on-site contamination. Phase I should include:
  - a. Review of available documents pertinent to the subject site to evaluate current and previous uses.
  - b. Site reconnaissance to evaluate areas where contamination of surficial solid may have taken place.
  - c. Excavation and testing of oil samples to determine presence of near surface contamination of soil.
  - d. Subsurface exploration to determine presence of sumps on-site. Testing of possible drilling fluids for heavy metals.
  - e. Completion of soil gas vapor detection excavations located adjacent to the existing on-site wells.
  - f. Testing of air samples for gas vapor, methane gas and sulfur compounds.
2. The actual site characterization and remedial action plan would be developed as part of a later phase. Upon completion of the Environmental Assessment, a Remedial Action Plan can be developed. This plan should address the following items:



- a. Treatment of possible crude oil contaminated soils. A possible solution to this condition would be aeration of the contaminated soils to release the volatile gases and then incorporation of the treated solid into the roadway fills (subgrade).
- b. Treatment of possible drilling sumps by either on-site disposal of non-contaminated drilling fluids or off-site disposal of contaminated fluids.
- c. Treatment of the possibility of the accumulation of methane gas.

Methane Gas

- 3. Prior to development, a thorough site study for the presence of surface and shallow subsurface methane gas should be performed. Any abnormal findings would require a Remedial Action Plan and further studies to assure sufficient mitigation of the hazardous areas prior to building construction. All structures should have a gas and vapor barrier installed underneath the slabs and foundations. Gas collection and ventilation systems should be installed over abandoned wells which are underneath or within ten (10) feet of any structure, and over wells which show evidence of surface emissions of methane gas. Additionally, following construction of structures, an organic vapor analysis should be conducted and the results evaluated to assure that acceptable air quality is maintained within buildings and residences.
- 4. The presence of methane gas on-site should be the subject of future studies that include the following tasks:
  - a. Drilling of test wells to monitor for subsurface methane deposits and confirm or deny the presence of biogenic methane bearing strata near area.
  - b. Shallow excavation and sampling in areas either known or assumed to be potential drilling mud sumps;
  - c. Vapor monitoring of shallow vapor probes placed at strategic location on the site and collection of soil vapor samples;
  - d. Vapor survey areas adjacent to known abandoned oil wells;
  - e. Laboratory analysis of selected soil samples for metals and soil vapor samples for gases.

## Other Oil Production Related Hazards

5. Oil wells scheduled for abandonment should be completed in accordance with the standards and specifications of the City of Huntington Beach and the California Division of Oil and Gas. Wells which have previously been abandoned must be reabandoned to the most current requirements of the City of Huntington Beach and the Division of Oil and Gas.
6. Existing oil production lines are located throughout the site. Treatment of these lines will depend on proposed land use and development. Utility lines should be relocated and or removed with the trench being filled with compacted fill.

## Hazardous Materials

1. The use, storage and disposal of hazardous materials should be enforced by City of Huntington Beach to provide the greatest possible protection to the public from accidental occurrences.
2. Active wells remaining on-site should be secured and screened as required by the City of Huntington Beach.
3. Prior to development, a review of available public health records should be performed to evaluate possible public health risk sites in the vicinity of the subject site.
4. An inventory of all hazardous materials used and stored by industries locating within the project area should be maintained and recorded for use by the City Fire Department. This inventory should include the location at which each hazardous material is used.

## Aesthetics

1. Landscaping of future projects should be designed to minimize visual impacts on adjacent parcels. Special consideration should be given to orientation of the project's residences (i.e. windows and deck) so as to respect the privacy of adjacent and nearby homes.
2. Wherever feasible, oil production facilities on-site should be eliminated or consolidated to reduce their total number. Facilities remaining on-site should be painted, camouflaged, or otherwise screened by perimeter walls, plantings or like treatments to reduce their unsightliness to future residents.

## Land-Use Policies

Prior to the issuance of grading permits, the Department of Fish and Game should be notified of grading activities on-site that are scheduled to commence in the swales, in order to preclude the possible elimination of wetland areas under the jurisdiction of the Department of Fish and Game, as further specified in the Biological Resources section of this EIR.

## Biological

1. Following construction of necessary infrastructure in the main drainage swale, i.e., utility lines, sewers, etc., this swale should remain as open space. Mitigation for the loss of cattail marsh habitat (0.5 acres) and willow habitat (0.5 acres) which are depicted on Exhibit 20, will take place such that a minimum of 1.0 acre of riparian vegetation is established in this drainage swale. The plants utilized in the revegetated area will be enclosed from the recommended plant palette indicated on page VI-11.
2. Through adoption of future Specific Plans large trees suitable for use by raptors such as the red-shouldered hawk, should be preserved or replaced in accordance with the tree species identified in the plant palette contained on page VI-11.
3. Any grading or filling in the brackish wetlands in the western portion of the project site shall be mitigated by restoration of an equal area of coastal wetland at a nearby location in the open space area.
4. Effects upon on-site wetlands within the jurisdiction of the California Department of Fish and Game will require mitigation defined by 1603 permits.



## PLANT PALETTE

### Scientific Name

### Common Name

#### Trees

<i>Alnus rhombifolia</i>	White Alder
<i>Juglans californica</i>	California Walnut
<i>Platanus racemosa</i>	Sycamore
<i>Quercus agrifolia</i>	Coast Live Oak
<i>S. laevigata</i>	Red Willow
<i>S. lasiandra</i>	Golden Willow
<i>S. hindsiana</i>	Sandbar Willow
<i>Salix lasiolepis</i>	Arroyo Willow
<i>Umbellularia californica</i>	California Bay

#### Tall Shrubs

<i>Baccharis pilularis</i> var. <i>consanguinea</i>	Coyote Brush
<i>Heteromeles arbutifolia</i>	Toyon
<i>R. ovata</i>	Sugarbush
<i>Rhus laurina</i>	Laurel sumac
<i>Sambucus mexicana</i>	Elderberry

#### Low Shrubs and Vines

<i>Diplacus longiflorus</i>	Bush Monkeyflower
<i>R. viburnifolium</i>	Catalina Currant
<i>R. aureum</i>	Golden Currant
<i>Ribes speciosum</i>	Fuschia-flowered Gooseberry
<i>Rosa californica</i>	California Rose
<i>Rubus ursinus</i>	California Blackberry
<i>Toxicodendron diversilobum</i>	Poison Oak
<i>Vitis californica</i>	California Grape

#### Herbaceous Plants and Grasses

<i>Artemisia douglasiana</i>	Mugwort
<i>Elymus condensatus</i>	Giant Wild Rye
<i>Scirpus</i> spp.	Tule
<i>Typha</i> spp.	Cattail

## Public Services and Utilities

### Schools

1. The General Plan Amendment 89-1 designates a site for a new elementary school to serve students generated by residential development within the project area.
2. The school district and major landowner should enter into an agreement for acquisition or lease of the site as part of implementation of this General Plan Amendment.
3. Developers should pay school impact fees to finance construction of necessary school facilities.
4. The Huntington Beach Union High School District should coordinate its expansion plans with phasing of development within the project area and surrounding areas.