

## Natural Sciences, LLC

April 7, 2014

Mr. Sonke Mastrup  
Executive Director  
California Fish and Game Commission  
1416 Ninth Street  
P.O. Box 944209  
Sacramento, CA 94244-2090

RE: Lease Application for California Kelp Beds 102, 103, 107, and 108

Dear Mr. Mastrup,

Natural Sciences, LLC is a company that has been formed for the purpose of sourcing *Macrocystis pyrifera* to provide a finished product of dried kelp. As a result, Natural Sciences is interested in establishing kelp harvest and drying operations in southern California.

In preparation for this venture, Natural Sciences has retained the services of a former Kelco and ISP Alginates marine biologist and his team of mechanical and chemical engineers. With their assistance, Natural Sciences has identified available landing craft in the San Diego area that can be converted into mechanical kelp harvesting vessels. In addition, several sites for vessel docking, kelp unloading, and kelp processing operations have been explored. In order to move forward with this business venture, Natural Sciences would like to acquire kelp bed leases at San Clemente Island and San Nicolas Island.

Natural Sciences submits this letter in accordance with Title 14, Section 165.5 for a 5-year lease for Department of Fish and Wildlife Kelp Beds 102, 103, 107, and 108. Kelp Bed 102 is located at San Clemente Island from a line drawn 210° from China Point to a line drawn 226° from Seal Cove (2.39 square miles). Kelp Bed 103 is at San Clemente Island from a line drawn 226° from Seal Cove to a line drawn 0° from North West Harbor (2.89 square miles). Kelp Bed 107 is located at San Nicolas Island south of a line drawn 75° from the east end to a line drawn 283° from the west end (1.15 square miles). Kelp Bed 108 is at San Nicolas Island north of a line drawn 283° from the west end to a line drawn 75° from the east end (2.85 square miles). The total size of these kelp beds as identified by the Department of Fish and Wildlife is 9.28 square miles, all of which is located in southern California. Natural Sciences submits a royalty bid of [REDACTED] per wet weight ton of kelp harvested. Enclosed with this application is a deposit of [REDACTED] for Beds 102, 103, 107, and 108 which is computed on the basis of the royalty rate times the harvest of 1,500 tons of kelp per square mile in southern California [Section 165.5(g), Title 14, CCRI].

Our primary purpose for acquiring the leases on Kelp Beds 102, 103, 107 and 108 is to secure a source of kelp in the southern California marine region for a dried kelp business. Evaluations are ongoing regarding the vessels Natural Sciences plans to utilize to harvest the kelp, including larger vessels to minimize the number of trips and any unnecessary disturbance to the environment. At this time, Natural Sciences has identified three potential vessels for our operation. Two of the vessels are surplus U.S. Navy LCM8s that will require refurbishing. The third is the recently refurbished and operational M/V SUPPLIER. Natural Sciences plans to convert all of these vessels into mechanical kelp harvesters. All of the vessels are approximately 70-feet long with a gross rated tonnage of 12 tons and fuel capacity of 1,000 gals. Once converted these mechanical kelp harvesters will have a 40-60 ton kelp load capacity. Natural Sciences plans to dock and unload the vessels in San Diego Bay at Driscoll's Wharf at 4918 North Harbor Drive, San Diego, CA 92106. California Department of Fish and Wildlife personnel will have full access to the unloading and weighing of the kelp loads. Natural Sciences plans to unload the harvested kelp in nets that will be weighed by an industrial crane scale for tonnage reporting to the State. The kelp is then planned for transport to the unincorporated, agriculturally zoned processing and drying facility potentially located in San Diego County at 19037 Highway 94, Dulzura, CA 91917. The kelp transport is to include watertight trucks so that no moisture is discharged from the truck during transport. Natural Sciences drying operation is designed to utilize all of the kelp that is harvested, thereby eliminating the need for any byproduct disposal.

Natural Sciences plans to harvest kelp in Beds 102, 103, 107, and 108 along the entire lengths of the beds using the same sustainable harvesting techniques developed by Kelco, which is similar to a farmer harvesting a field. The harvests will take place in water depths ranging from the 5 fathom contours out to the offshore edge of the kelp beds in approximately 15 fathoms of water.

Natural Sciences plan is to harvest a total of 11,000 tons from Beds 102, 103, 107, and 108 during our first year of operation, which is currently projected to be 2015. The annual kelp harvest per bed would be 3,000 tons from Bed 102, 3,000 tons from Bed 103, 1,000 tons from Bed 107, and 4,000 tons from Bed 108. This would require making on average four harvest trips to each bed per month. The number of harvest trips would range during the year from two trips per month to each of the four beds from December to March to five trips per month to each of the beds from April to November. The monthly harvest amount in each of the four beds would range from approximately 100 tons from December to March to 400 tons from April to November.

Natural Sciences plans to increase harvests to 22,000 tons per year from Beds 102, 103, 107, and 108 during our second to fifth year of operation, which is currently projected as 2016 to 2019. The annual kelp harvest per bed would be 5,500 tons from Bed 102, 6,700 tons from Bed 103, 1,300 tons from Bed 107, and 8,500 tons from Bed 108. This would require making on average eight harvest trips to each bed per month. The number of harvest trips would range during the year from four trips per month to each of the four beds from December to March to 10 trips per month to each of the beds from April to November. The monthly harvest amount in each of the four beds would range from approximately 200 tons from December to March to 800 tons from April to November.

The harvest quantities projected for years one to five of operation are well within the historical harvest capacity of San Clemente Island and San Nicolas Island. San Clemente Island Bed 102 averaged approximately 10,000 tons annually during the 40-year period from 1965 until ISP Alginates ceased operations in 2005, which was the last year the bed was harvested. The maximum annual harvest from Bed 102 was 17,968. San Clemente Island Bed 103 averaged approximately 12,000 tons annually during the 40-year period from 1965 to the last year it was harvested in 2005. The maximum annual harvest from Bed 103 was 21,700. San Nicolas Island Bed 107 averaged approximately 2,500 tons annually during the 40-year period from 1965 to the last year it was harvested in 2005. The maximum annual harvest from Bed 107 was 4,508. San Nicolas Island Bed 108 averaged approximately 15,000 tons annually during the 40-year period from 1965 to the last year it was harvested in 2005. The maximum annual harvest from Bed 108 was 51,139. In summary, Beds 102, 103, 107, and 108 averaged a total annual harvest of 39,500 over a 40 year period, which is about four times that of Natural Sciences’s year one requirements and about twice that of Natural Sciences’s projected harvest for years two through five.

Table 1: Natural Sciences Harvest Plan vs. Average and Maximum Harvest Amounts

2015 Harvest Plan - San Clemente Island Bed 102													
(wet tons)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Natural Sciences Harvest Plan	125	125	125	313	313	313	313	313	313	313	313	125	3,000
Avg Harvest 1965 - 2005	417	417	417	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042	417	10,000
Max Recorded Annual Harvest	749	749	749	1,872	1,872	1,872	1,872	1,872	1,872	1,872	1,872	749	17,968
% of Avg Harvest 1965 - 2005	-	-	-	-	-	-	-	-	-	-	-	-	30%
% of Max Annual Harvest	-	-	-	-	-	-	-	-	-	-	-	-	17%

2016 - 2019 Harvest Plan - San Clemente Island Bed 102													
(wet tons)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Natural Sciences Harvest Plan	229	229	229	573	573	573	573	573	573	573	573	229	5,500
Avg Harvest 1965 - 2005	417	417	417	1,042	1,042	1,042	1,042	1,042	1,042	1,042	1,042	417	10,000
Max Recorded Annual Harvest	749	749	749	1,872	1,872	1,872	1,872	1,872	1,872	1,872	1,872	749	17,968
% of Avg Harvest 1965 - 2005	-	-	-	-	-	-	-	-	-	-	-	-	55%
% of Max Annual Harvest	-	-	-	-	-	-	-	-	-	-	-	-	31%

2015 Harvest Plan - San Clemente Island Bed 103													
(wet tons)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Natural Sciences Harvest Plan	125	125	125	313	313	313	313	313	313	313	313	125	3,000
Avg Harvest 1965 - 2005	500	500	500	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	500	12,000
Max Recorded Annual Harvest	904	904	904	2,260	2,260	2,260	2,260	2,260	2,260	2,260	2,260	904	21,700
% of Avg Harvest 1965 - 2005	-	-	-	-	-	-	-	-	-	-	-	-	25%
% of Max Annual Harvest	-	-	-	-	-	-	-	-	-	-	-	-	14%

2016 - 2019 Harvest Plan - San Clemente Island Bed 103													
(wet tons)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Natural Sciences Harvest Plan	279	279	279	698	698	698	698	698	698	698	698	279	6,700
Avg Harvest 1965 - 2005	500	500	500	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	500	12,000
Max Recorded Annual Harvest	904	904	904	2,260	2,260	2,260	2,260	2,260	2,260	2,260	2,260	904	21,700
% of Avg Harvest 1965 - 2005	-	-	-	-	-	-	-	-	-	-	-	-	56%
% of Max Annual Harvest	-	-	-	-	-	-	-	-	-	-	-	-	31%

2015 Harvest Plan - San Nicolas Island Bed 107													
(wet tons)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Natural Sciences Harvest Plan	42	42	42	104	104	104	104	104	104	104	104	42	1,000
Avg Harvest 1965 - 2005	104	104	104	260	260	260	260	260	260	260	260	104	2,500
Max Recorded Annual Harvest	188	188	188	470	470	470	470	470	470	470	470	188	4,508
% of Avg Harvest 1965 - 2005	-	-	-	-	-	-	-	-	-	-	-	-	40%
% of Max Annual Harvest	-	-	-	-	-	-	-	-	-	-	-	-	22%

2016 - 2019 Harvest Plan - San Nicolas Island Bed 107													
(wet tons)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Natural Sciences Harvest Plan	54	54	54	135	135	135	135	135	135	135	135	54	1,300
Avg Harvest 1965 - 2005	104	104	104	260	260	260	260	260	260	260	260	104	2,500
Max Recorded Annual Harvest	188	188	188	470	470	470	470	470	470	470	470	188	4,508
% of Avg Harvest 1965 - 2005	-	-	-	-	-	-	-	-	-	-	-	-	52%
% of Max Annual Harvest	-	-	-	-	-	-	-	-	-	-	-	-	29%

2015 Harvest Plan - San Nicolas Island Bed 108													
(wet tons)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Natural Sciences Harvest Plan	167	167	167	417	417	417	417	417	417	417	417	167	4,000
Avg Harvest 1965 - 2005	625	625	625	1,563	1,563	1,563	1,563	1,563	1,563	1,563	1,563	625	15,000
Max Recorded Annual Harvest	2,131	2,131	2,131	5,327	5,327	5,327	5,327	5,327	5,327	5,327	5,327	2,131	51,139
% of Avg Harvest 1965 - 2005	-	-	-	-	-	-	-	-	-	-	-	-	27%
% of Max Annual Harvest	-	-	-	-	-	-	-	-	-	-	-	-	8%

2016 - 2019 Harvest Plan - San Nicolas Island Bed 108													
(wet tons)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Natural Sciences Harvest Plan	354	354	354	885	885	885	885	885	885	885	885	354	8,500
Avg Harvest 1965 - 2005	625	625	625	1,563	1,563	1,563	1,563	1,563	1,563	1,563	1,563	625	15,000
Max Recorded Annual Harvest	2,131	2,131	2,131	5,327	5,327	5,327	5,327	5,327	5,327	5,327	5,327	2,131	51,139
% of Avg Harvest 1965 - 2005	-	-	-	-	-	-	-	-	-	-	-	-	57%
% of Max Annual Harvest	-	-	-	-	-	-	-	-	-	-	-	-	17%

Summary of Beds 102/103/107/108		
	2015	2016 - 2019
Natural Sciences Harvest Plan	11,000	22,000
Avg Harvest 1965 - 2005	39,500	39,500
Max Recorded Annual Harvest	95,315	95,315
% of Avg Harvest 1965 - 2005	28%	56%
% of Max Annual Harvest	12%	23%

As shown in Table 1 above, leasing the San Clemente Island beds 102 and 103 and the San Nicolas Islands beds 107 and 108, should allow Natural Sciences to meet its harvest needs while importantly not over-harvesting any single bed.

Natural Sciences might also harvest kelp in Open Kelp Beds 1, 2, 7, 8 and 101. Harvests in these additional beds would only occur if weather prevented our harvesters from reaching the windward side of San Clemente Island where Beds 102 and 103 are located or to San Nicolas Island. Based on the generally calm ocean conditions that exist in southern California, we would anticipate harvesting less than 10% of our projected annual harvests from these beds. That equates to approximately 1,000 tons spread evenly among all the open beds in year one and about 2,000 in years two through five.

Natural Sciences plans to monitor the health and growth of these kelp beds using diving and aerial survey techniques developed by their retained former Kelco and ISP Alginates marine biologist who has over 30 years of experience evaluating the condition and abundance of California's kelp bed resources.

Natural Sciences will only use mechanical harvesting techniques to obtain the kelp. We have already identified the marine engineers that could put together the plans for the conversion of the vessels to kelp harvesters. The vessel conversions, refurbishment, and ongoing operation and maintenance would add jobs and income in the State.

The kelp that Natural Sciences plans to harvest is to be brought onboard and deposited in nets for easy handling. The kelp unloading process is planned to take place at Driscoll's Wharf prior to being transported to our likely Dulzura site for initial processing including solar drying and milling. Most of the equipment and jobs at the Dulzura processing location is expected to be sourced in California, which would create additional opportunities for citizens of the State. Natural Sciences finished product is then planned for sale and transport within the United States.

Natural Sciences is a wholly owned subsidiary of CARBO Ceramics Inc. (CARBO). CARBO is a 35 year old company and one that is well positioned to back Natural Sciences' efforts to carry out a kelp harvesting and drying operation in a sustainable and responsible manner.

CARBO is committed to a Safe and Healthy workplace and protection of the Environment.

This statement is CARBO's primary core value. At CARBO, we seek to be a good neighbor and operate in ways that focus on mitigating the environmental impact of our production processes. We strive to be a safe and fulfilling place to work.

At the end of 2013, CARBO had 1,025 employees worldwide and sells its products and services in more than 50 countries around the world. Its products and services generated revenues of \$668 million in 2013. CARBO had \$94 million in cash, \$50 million of capacity under its credit facility and no debt outstanding as of December 31, 2013.

CARBO's strong financial position will afford Natural Sciences the opportunity to start a successful kelp harvesting and drying operation in southern California and carry it out in a sustainable and responsible way.

Natural Sciences plans to continue the stewardship role established by Kelco and ISP Alginates in helping to maintain healthy kelp forest resources. There is a long history of research and evaluation that reveals kelp harvesting to be a well-run and sustainable industry. Natural Sciences strongly supports the kelp harvesting regulations established by the State of California and the management efforts of the Department of Fish and Wildlife. In addition to complying with all harvesting regulations, Natural Sciences will also establish and abide by special methods to assure that individual kelp plants are not harvested continuously. Natural Sciences will utilize harvest techniques similar to a farmer harvesting a field. The vessel will establish a cut parallel to shore and positively identify it using a recording GPS system. The harvest cut and the tracking GPS will allow Natural Sciences' vessels to systematically harvest the bed to assure the same area is not cut more than once every 4 to 6 months. Natural Sciences currently has no plans to harvest kelp off central California, so there will be no conflicts between our harvesting operations, rafting female sea otters, or the bull kelp species *Nereocystis luetkeana*.

Please contact Mark Thomas at the following address if you have any questions or require additional information relative to this kelp bed leasing proposal.

Mark Thomas  
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Houston, TX 77079  
281-921-6400

We look forward to working with the California Department of Fish and Wildlife and the Commission to sustainably and responsibly harvest kelp and add economic vitality to the great State of California.

Sincerely,



Ernesto Bautista, III  
Chief Financial Officer  
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Houston, TX 77079  
281-921-6400

CC:

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